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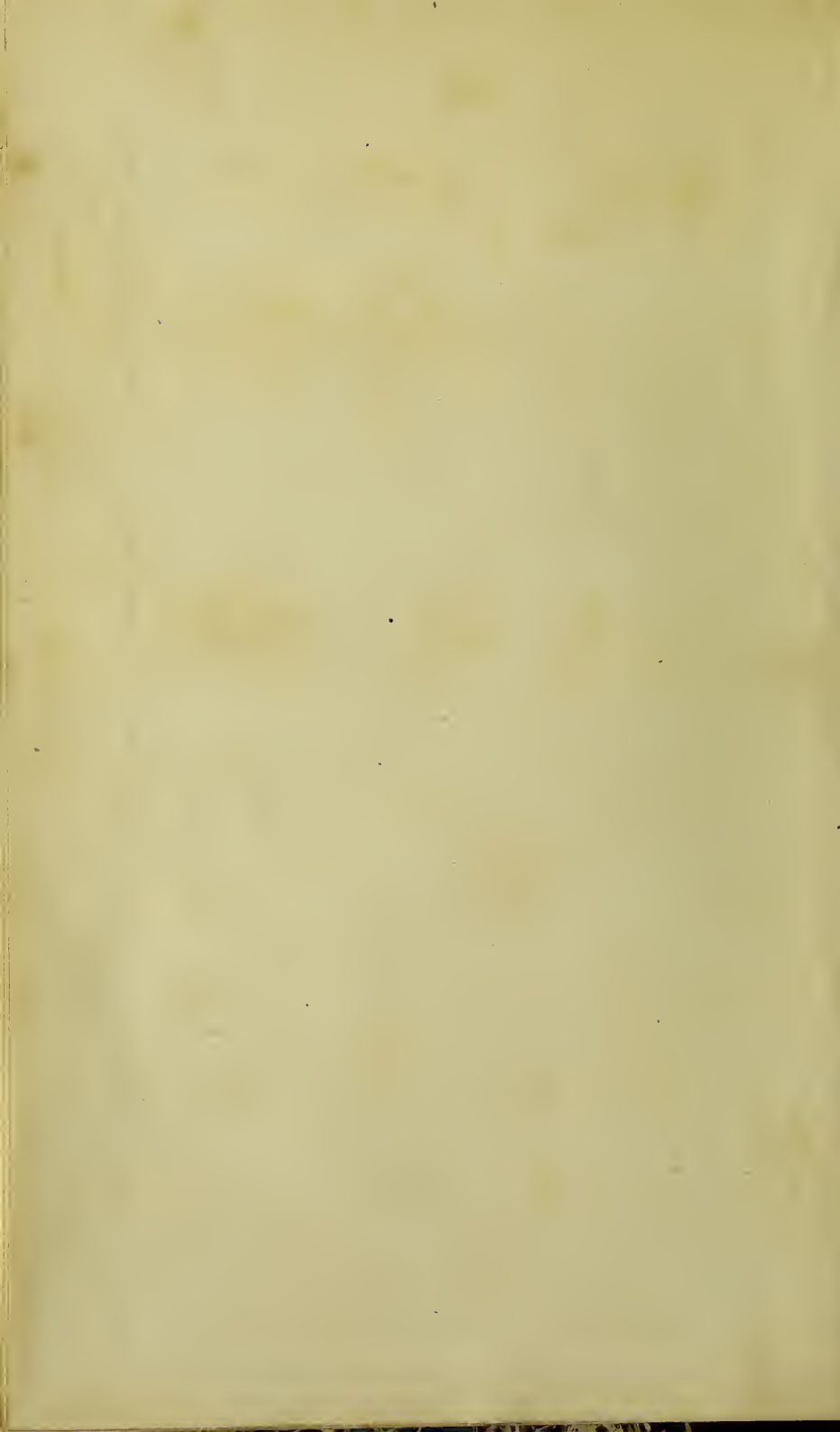
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A N
HISTORICAL SKETCH
O F
MEDICINE AND SURGERY,
FROM THEIR
O R I G I N
TO THE
P R E S E N T T I M E;
AND OF THE
PRINCIPAL AUTHORS, DISCOVERIES, IM-
PROVEMENTS, IMPERFECTIONS and
ERRORS.

By W. B L A C K, M.D.

L O N D O N:

Printed for J. J O H N S O N, No. 72, in St. Paul's
Church Yard.

M D C C L X X X I I.

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A N

A N
HISTORICAL SKETCH
O F
MEDICINE AND SURGERY.

C H A P. I.

I N T R O D U C T I O N.

AUTHORS of eminence have expressed their wishes, that every thing certain and established in Physic was reduced into a moderate compass, entirely detached from theory and speculation. Truth however compels me reluctantly to observe (with submission to better judgements) that the defects which are commonly said to run through general history, or the extraordinary narratives of travellers, may without injustice be laid to the charge of Medical Authors; half of them are filled with falsities. The ambition of gaining disciples, and of founding separate Sects, has given rise to a multiplicity of jarring systems in Physic: many resemble a Text crushed under the weight of metaphysical jargon: interesting facts are buried under a confused heap of sophistry and error; the writers raise a thick mist about themselves, and we have

considerable difficulty to extricate plain truth, and practical remarks. To speak in Medical language, the majority of publications in this science are overdosed with theory, even to disgust.

GOTHIC and imperfect as the structure of Medicine may be thought at present, many thousand different authors have exerted their labours in erecting it. Vander Linden and Merklin give a catalogue of their names to the beginning of the present century. Heister, who wrote about forty years ago, enumerates upwards of seven hundred surgical writers, whose works are diffused in more than one thousand volumes, and many hundreds have since been added. Astruc's List of Writers on the venereal disease, including systems and detached treatises, amounted thirty years ago to above *five hundred*; yet the disease was then known in Europe but 256 years. Haller, the late celebrated anatomist, collected into one universal catalogue, the names of medical and surgical writers, with the titles of their books and pamphlets: the whole magazine heaped together, notwithstanding numerous omissions, exceeds *thirty thousand*.

THIS profusion of volumes is principally the progeny of the moderns. From the days of Hippocrates to about the year fifteen hundred of the Christian era, and including a space nearly of two thousand years, we have not above a *score* of medical and surgical authors, that at this day merit perusal. The short interval within the last three hundred years, or, which is the same, from
the

the revival of literature in Europe, has teemed forth inundations of Medical writers. The life of one man, unless it was protracted to the age of the Antediluvians, would be too short to explore, and his memory and intellects too limited to contain them.

WHEN we compare the increase of Medical knowledge with the number and size of the Authors, the former appears inconceivably diminutive. Few of them contain any material discovery or useful improvement. The essence of gross volumes might be contracted into a few lines. Numbers display a manifest want of information or of veracity: others are filled with speculative bombast, hackneyed remarks and quotations: their readers may be compared to an industrious bee, who patiently extracts a little honey amidst heaps of weeds and thistles. Much fatigue, and the danger of losing our eye-sight, or of wearing ourselves down to skin and bone by dint of incessant reading of books, may be conveniently retrenched. A prodigious crowd of writers merit no place in general history: their works no longer interest Medicine: they are, to use the expression of an inimitable historian, (Voltaire) “ Like the innumerable herd of men who have passed in review upon the theatre of the earth, now decayed and forgotten, and no longer objects of attention. To read them would only encumber the head with a jumble of words, and burthen the memory to no useful purpose.”

IN drawing a short sketch of Medicine and Surgery through a revolution of ages and empires, all that I can take notice of amongst this immense pile of books, are those authors who have done some real service to Medicine, either as Physicians, Anatomists, Surgeons, Botanists, Chymists, or Philosophers; nor shall I let those escape unnoticed, who have been instrumental in misleading mankind, and in clogging the progress of Medicine to maturity. Mr. Le Clerc, in a large quarto Volume, finished his journey in Arabia, and Dr. Friend travelled very little further. I could not be contented to alight in Egyptian, Arabian, or Gothic deserts: a compleat library of Medical writers three centuries ago, I knew, would at this day be extremely imperfect. It is a great defect in Boerhaaves "*Methodus discendi artem Medicam*," that he did not pursue the regular chronological order in commenting upon the Authors, and that Writers one and two thousand years ago are promiscuously confounded with the Writers of the present century. In fact, without the general historical chart of human affairs, the history of Medicine and of Authors is a wilderness and chaos: we may be said to sail in a boundless ocean without a compass or quadrant.

C H A P. II.

The ORIGIN of MEDICINE and SURGERY.

THE infancy of Medicine resembles that of most kingdoms; it is filled up with fable and conjecture, and rests upon dubious traditions: we have few historical records to conduct us, and perhaps, after a tedious search, certainty would add very little to the fund of Medical Science. I shall, notwithstanding, briefly endeavour, so far as history or chronology direct the road, to trace Medicine back to its original sources: this inquiry will conduce to order, to preserve regularity in the series of events, to anticipate digressions otherwise unavoidable, and leave no chasm in Medical history. Arts, Sciences, and Medicine, are so closely connected with historic dates, with the rise, fall, manners, and cultivation of different nations, that it is impossible to separate them entirely: the origin, progress, and revolutions of Physick must otherwise appear mysterious and inexplicable. It would be reading history without globes or maps. I mean to touch as concisely as possible upon those subjects.

FROM nations the earliest civilized, we should expect the first rudiments of Arts and Science. “Europe was covered with forests, and inhabited
“by wandering savages, when extensive empires,
“populous cities, arts, luxury, and despotism
“were established in Asia, and in the north-east

“part of Africa, Egypt.” Sacred history is solely confined to that portion of the Globe. To these antient countries we are originally indebted for many useful, and for many profitable branches of trade and manufactories. The oldest book we have is the Bible, and the most antient author, Moses. According to this inspired writer, the Earth, the Sun, the Planets, and the first human Pair were created about 2510, or 50 years before he led the Israelites into Stony Arabia, and delivered them from the oppression of Pharaoh, King of Egypt. 1651 years after the creation, the deluge of the globe is said to have happened. The Jewish history from Moses is continued by several writers down to the Messiah’s era, or 4000th year of the world.

CHINA, Egypt, and even India assert their pretensions to an antiquity, which some may regard as chimerical and extravagant. The Chinese appeal to celestial Arithmetic, to Eclipses, to the motions and revolutions of the heavenly bodies, which are fixed and uniform, to prove the antiquity of their nation. If credit can be given to the original era of a book lately published in English, (a code of the Gentoo laws) and translated from the Indostan language, the Egyptian Prophet might be thought to have borrowed a share of his system of jurisprudence from the Legislator of India, Brama.

ALL the authentic knowledge of Chronology, if we except India and China, is come down to us either from Scripture, or from the Greek authors : in these records we must seek for antient erudition and history. Homer, the Greek Poet, who lived five hundred years only after Moses, sings of proud Thebes, the mistress of the Egyptian plain : the walls, columns, porticos, and extensive edifices, now crumbling into dust, prove the former opulence and splendor of this ancient city. The era or first foundation of those stupenduous piles of building, the Pyramids of Egypt, of the catacombs, grottos, artificial lakes, labyrinths, and subterranean excavations, with many other vast monuments of magnificence, human labour and expence, were lost when the first Greek Philosophers travelled into that country. Lycurgus, Solon, Thales, and Pythagoras, had visited Egypt five, six, and seven hundred years before Christ. Herodotus, a native of a Greek Colony in Lesser Asia, who lived about four hundred years after the poets, Hesiod and Homer, and a little before the invasion of Greece by Xerxes, is the most ancient profane historian : Cicero styles him the Father of History. This venerable author, who had travelled through various nations to acquire information, and to collect materials for his history, assures us, that, in his days, the Egyptian Priests reckoned up three hundred and thirty Kings who had reigned over that nation, eighteen of whom were Ethiopians. Some of the

Temples, he informs us, were adorned with porticos and figures of excellent sculpture. The Egyptians, continues this author, were the first inventors of the year, which they divided into twelve parts or months: they first gave names to, and invented the Genealogy of the Heathen Gods, which the Greeks adopted from them, together with many religious ceremonies: they were the first of mankind who affirmed the immortality of the soul, and the doctrine of its transmigration, three thousand years after, through other animals. Their favourite studies were Astronomy, Astrology, Magic, and the Divination of future events. "More prodigies, he adds, abound in Egypt, than in all the rest of the world, and they are beyond measure superstitious in all things regarding religion."

GREECE, the first enlightened nation of Europe, or rather confederacy of little states, acknowledges to have received the rudiments of arts and knowledge from Asia, and from Egypt. Before the siege of Troy, (A. C. 882 years) we find Greece enslaved by a number of petty tyrants, dignified with the appellation of Kings. Fifty years prior to this memorable siege, Esculapius, the Greek, is said to have been deified, on account of his Medical skill, and Temples were built to his memory, where he was worshipped as a Divinity. In many of those temples, at Pergamus, in the island of Cos, and in many villages of Greece, diseases and cures were registered and engraved

engraved upon marble tables, or stones, hung up for the benefit and instruction of others who might stand in need of Medical aid. The Priests and Priestesses, the guardians of the Temples, and who prepared the Medicines, converted the worship into a lucrative trade, and we have good reason to suspect, acted in several instances like the interested proprietors of modern Medicinal springs: they invented some falsehoods, and forged cures, to increase the renown of the Oracle. Numbers indisposed travelled from distant kingdoms to consult the Greek Oracle, and endeavoured to conciliate his favour by liberal presents: there are instances many centuries after of Roman Emperors, when afflicted with disease, making a journey to Pergamus for that express purpose. Most of the important transactions of mankind in early periods in Asia, in Egypt, in Greece, and in Italy, were regulated by Oracles.

PODALIRIUS and Machaon, two sons of Esculapius, and petty Kings of Greece, accompanied Agamemnon to Troy. Homer speaks of them merely as Surgeons dextrous in healing wounds and extracting darts; for in the great pestilential sickness and mortality which invaded the Grecian army, there is no mention of their being consulted. Epidemical diseases, and every other disease, the cause of which did not immediately strike their rude senses, were, in those days of philosophical ignorance, attributed not to natural causes, but
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to the immediate wrath of Heaven : their only remedies in such distress, were prayers, sacrifices, incantations, magic, and priest-craft : this was at least an easy and short method to account for and to deprecate natural phænomena, and was well adapted to vulgar capacities. Diseases were believed to be hurled down upon the heads of guilty mortals, and to spring from the resentment of some invisible demon : such fears urged trembling wretches to adopt superstition as a Medical remedy.

MEDICINE, until the era of the Greek Philosophers, is a barren desert. Greece then dethroned most of her little despots, and governments more favourable to the people and to science were formed. The Spartan government was erected from the model of Lycurgus, seven hundred years before the Christian epoch ; and Athens, a century after Sparta, upon that of Solon, a man of great eloquence, and an eminent poet. Under the popular form of government instituted by him, the Athenians became polite, sociable, and humane : Arts, Eloquence, Poetry, Sculpture, Mathematics, and other liberal studies, were by them carried to great perfection. Sparta, on the other hand, was formed for the sole purpose of war : the laws of Lycurgus were fullen, severe, and tinctured with brutal savageness.

MACEDON, before the time of Philip and his son Alexander, had been considered by the Greeks

as half barbarous : they were rustic borderers, and a warlike people, not yet possessed of the Athenian graces and scientific accomplishments. — During the three centuries before Alexander's short reign (A. C. 356) we find that almost all the accomplished Philosophers, Mathematicians, Generals, Orators, Theatrical Writers, Historians, Sculptors, Painters and Architects of Greece, together with the Physician Hippocrates, flourished. The brightest epoch of the arts and sciences in Greece was a short time preceding Philip and his son, and during their lives.

FROM all that rich portion of Asia, now trembling under the iron sceptres of Turks and Persians, and once the seat of powerful monarchies and absolute despots of the Assyrians, Babylonians, Medes, and Persians, and afterwards of Alexander and the Macedonians, Physick, in its infancy, receives not the faintest glimmerings of light. The Chaldeans or Priests of Babylon, we are told by Herodotus, had the reputation of celebrated Astronomers, but the Babylonians made no use of Physicians : their sick were carried out to public roads, markets, and frequented places : travellers on that road conversed with them, and acquainted them of any remedies they had seen used in similar complaints with success, either upon themselves or their neighbours. To pass silently by the sick, without enquiring into the nature of his distemper, was there thought a crime.

Italy

ITALY arose in succession to Greece and Sicily, from which it is separated by a narrow channel of sea, the second civilized nation of Europe. The Roman history goes no farther back than to Æneas, who, after the conflagration of Troy, is reported to have arrived there with his remnant of Trojans. At Alexander's death the city of Rome had stood under the regal government, and under Consuls and Dictators four hundred years. In that period the Romans can boast of many eminent Generals, respectable Senators, and even a few Orators, if their speeches have not been fabricated by the historian, but of no writer in any one learned science. When we regard their literary talents we shall find, that from the rape of the Sabine virgins, during nearly five centuries, that fierce nation had considered war as one of the principal sensual and mental delights.

CARTHAGE, the opposite African neighbour to Italy, had been built 137 years before Rome: about Alexander's death, Carthage was mistress of the Mediterranean seas, a rich, commercial, and warlike republick. Tyre, her parent, boasted to have taught the art of navigation, and for ages had been the most celebrated mart of commerce, until the mad ambition of one man, Alexander, laid this industrious little state in irrecoverable ruins.

HAVING now attempted to adjust early chronology, and to point out the countries from which alone the seeds of learning and arts in those remote

mote periods can be collected, I am next to direct my inquiries to Medicine in its embryo state.—Ancient Medicine, like all early transactions of mankind, is a mixture of monsters, giants, demigods and fables. This must be my excuse for passing silently over the traditionally physical skill of Hermes, Bacchus, Apollo, Hercules and Chiron the Centaur: such subjects fall properly within the province of the Antiquarian, and to them I resign the irksome toil of ransacking the legends and dark archives of antiquity.

FROM the sacred writings our profession derives very little information. The regulations and precautions of Moses to prevent the spreading of that loathsome and infectious disease, the Leprosy, which stigmatized the Egyptians and Israelites, are familiar to all Christians. The principal precautions consisted in confining the unclean, and in purifying the defiled house and garments. Religion was called in to enforce the medicinal ordinances, and to render cleanliness a sacred and moral duty. Herodotus remarks that the Egyptians, especially the Priests, were uncommonly cleanly; that probably circumcision, which the Egyptians and Ethiopians have practised time immemorial, originated from similar motives. When Herodotus made the tour of Egypt, every Physician applied himself to the cure of a single disease only, by which means Physicians abounded every where; some professing the cure of the eyes, some of the head, and teeth, some of external,

nal, and others of internal disorders. Venesection was with them a familiar and frequent remedy: blood also was drawn by arteriotomy, by scarification and cupping glasses. In the delirium of Fevers, the legs of the sick person were bathed in warm water, and scarified so as to draw away a large quantity of blood. In obstinate head-achs, and ophthalmias, and in the epilepsy, vertigo and apoplexy, they burnt the temples and back part of the head with lint or mox: in pulmonary Consumptions they burnt ulcers in the breast; and in pains of the joints, or in the gout, they burnt over the affected part.--The lint was rolled into the form of a small cone or pyramid, the base of which being placed on the skin, and the top kindled burnt down into the flesh. Another singular custom of the Egyptians was to purge themselves every month, three days in succession by vomits and clysters, from a supposition that all distempers originated with the food, and were admitted by the mouth.

THE Persian monarchs, we may gather from Herodotus, entertained Egyptians as their Physicians and Surgeons. Cyrus, the cotemporary of Solon and Cræsus, and who united Medea, Lydia, Babylon, and Persia into one immense monarchy, when afflicted with a disorder of his eyes, he sent a messenger to Amasis, then king of Egypt, to request one of the best Physicians for that disease. Darius, successor to the son of Cyrus, Cambyses, by an accident had dislocated his ankle: the *Egyptian* Physicians who attended him, pulled violently
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and increased his pain, so that, during seven days and nights, he lay without sleep : in this situation, a Greek Physician, by name Democedes, who had been taken prisoner in the war between the Greeks and Persians, and was now, according to the barbarous customs of the times, in fetters, undertook and speedily accomplished the monarch's cure. Darius, upon his recovery, presented Democedes with a handsome house, and an immense sum of gold, he became his principal favourite, and was familiarly admitted to the King's table.

HERODOTUS describes several extraordinary ancient customs of the Persians, East Indians and Scythians in sickness. In Persia, whoever was afflicted with the Leprosy, they concluded he had committed some great offence against the sun, and if a stranger he was expelled from the country. "In some nations of the extensive country of India," says he, "when any of the community is sick, his best friends dispatch him presently; because they alledge he is in a wasting condition, and disease will corrupt his body: if he denies that he is sick, they have no regard to his words, but kill him, and eat his flesh: a woman is treated in the same manner by the women. Other Indians observe a quite contrary custom: they never kill any animal, but live on vegetable diet: when any of them is sick, he retires into a desert, where no care is taken of him whether he lives or dies." The former character of Anthropophagi, I apprehend,

prehend, many will consider amongst what Mr. Voltaire calls printed lies. The Scythians were an illiterate but powerful nation of savages, and abounded with Prophets. When the King of Scythia, continues Herodotus, is sick, all the famous Prophets are sent for, and they generally tell their noble patient that some Scythian, whom they name, has perjured himself in swearing falsely by the Royal Throne, (the usual solemn oath of the country) and that this has brought the distemper upon the King. The supposed criminal is then instantly apprehended, and, if he denies the fact, double the number of Prophets are called in: should they confirm the former judgment, the poor man loses his head: but if they adjudge him innocent, more divines are summoned to the council; and a plurality of voices determines the dispute, whether the Man, or the first Prophets who accused him, shall die? In the latter case, the Prophets are bundled together, thrown upon a cart, covered over with faggots, the horses turned loose, and in this way they are burnt.

MANY of the Egyptian Priests were a sort of conjurors or wizards in physick, and dealt out spells to their credulous flocks. We read also in Scripture that Benhadad, King of Syria, sent to consult Elisha the Prophet respecting the issue of his disease. Josephus, the Jewish historian, mentions a man called Eleazar who expelled evil spirits by
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putting a consecrated ring to the nose, and repeating a few verses composed and left for that purpose by King Solomon.

PHYSICK in its infancy consisted of a few simple remedies, of some rude notions of surgery, and of a farrago of superstition, charms and magic. The word Abracadabra, Abracadbr, Abracadb, repeated thus until it terminated in the single letter A, was once a remedy in great repute: superstition and ignorance in cases of recovery gave the whole merit to this silly trick, which was in reality due to nature alone, and in this way it became a fashionable medicine—sometimes this word in the conical form was engraved on stone or wood, and suspended round the neck.

THE necessities of men first prompted them to build houses to procure shelter from the violence of winds and storms, and likewise urged them, when afflicted with wounds, fractures, or other corporeal diseases, to seek for some remedy. In the earliest ages wars, wounds, fractures and dislocations happened; these accidents would require manual assistance, and give birth to surgery. The cure of many Surgical diseases would occur almost spontaneously, and with very little exercise of judgment: bones fractured, or dislocated, every one must be sensible, should be reduced to their natural situation; a hemorrhage stopped, and darts extracted. In medical diseases, strictly so denominated, sagacious men would see some recover from Fevers, for instance, and others die: they

would perceive those means which brought about a salutary or fatal crisis; what diet did good or injury; whether the crisis was preceded by vomiting, looseness, sweats, a flow of urine, a hemorrhage, by any natural evacuation, or critical eruption. They endeavoured afterwards, by art, to imitate those salutary efforts of nature, and thus diet came to be regulated, Vomits, Clysters, Purges, Sudorifics, and Venesection, took their rise. The death of some taught the cure of others, as shipwrecks are monitors to future navigators, to avoid the same danger. In this manner the cure of diseases advanced with slow paces; by the experience and reciprocal advice of neighbours, by the curiosity of Philosophers, by accidental discoveries, and by the sagacity of professional practitioners. A long series of ages however elapsed before those observations were collected and digested into a system of Medical erudition, and before they were so multiplied, that it was necessary for one man to dedicate many years study and attention to this single profession.

AMONGST several of the most ignorant tribes of Savages, some faint vestiges may be pointed out of ingenuity, and even of Medical knowledge; such at least as their immediate and pressing exigencies rendered necessary. When Columbus first penetrated into the Western hemisphere, the illiterate inhabitants of Hispaniola were possessed of a remedy against a dangerous disease, generated in their country, and affecting the springs of life :
they

they first taught the Europeans that Guaiacum was their cure for the Venereal Disease. In South America, the Indians by accident found out the virtues of the Peruvian Bark in Remittant Fevers, which are epidemical in Tropical Climates; and from them the Jesuits brought this invaluable Medicine to Europe. I could add more examples of this nature; but objects rather of curiosity must give way to those of utility.

C H A P. III.

*Of GREEK WRITERS : MEDICINE and SURGERY
in Greece, and at Alexandria, in Egypt.*

FEW books probably were written upon Medicine prior to the philosophic age of Greece : at first it seems a farrago of superstition and rude empiricism : consisting of few observations, the whole could easily be retained in the memory : in many cases, neighbours assisted each other with their advice, and in general, as a separate profession, it was monopolized by one family, and taught to their sons and grandsons, as we now teach handicraft trades : this was the education of Esculapius's family, from whom, in a long lineal genealogy, Hippocrates is said to have descended. We are assured, that the Medical profession had continued for several centuries without interruption hereditary in the Esculapian line. In Indostan, a similar custom has prevailed almost time immemorial : there all trades and professions, by the original institutions of Brama, have continued separate and distinct in the same families or tribes upwards of three thousand years. The Bramins are at this day the Priests and Physicians of India. Amongst the ancient Persians, the inhabitants were divided into tribes : the Oriental Magi were the Priests, Politicians, and Philosophers of Persia ; and thus arrayed their own reverend persons with triple importance. The ancient Egyptians too were separated into orders ; profes-
sions

sions and trades descending by inheritance in the same families.

MOST of the early sages of Greece, Thales, Pythagoras, and Empedocles, the Sicilian, studied Medicine, as we are informed by Celsus, but not as practical Physicians: they were endeavouring to investigate the primary elements of all bodies, and the structure of man, partly as a curious object of physicks; at the same time incessant study and contemplation had injured their constitution, and they were in hopes to make medical inquiries subservient to the preservation of their health.

THE Gymnastic medicine of which Herodicus was the founder, first attracts our attention. Games and sports had been early instituted in the Greek states, where youth were exercised for war, in order to increase their vigour and strength, qualities then so important in deciding battles. The whole scope of the Lacedemonian education was calculated to render the inhabitants robust and martial. With this view the mothers plunged their new-born infants into wine. Lycurgus ordered all weakly and deformed infants to be exposed to perish in caverns. This Legislator was not less anxious to improve the breed of men and women, than the Arabians and English are to improve the breed of their horses. Gymnastic exercises were cherished and practised with peculiar zeal by the Greeks. They had religious, military, athletic, and lastly medical gymnastics particularly adapted to the prevention or removal of diseases. Herodicus, the master of one of their academies, where youth were taught various military exercises,

cises, observing its good effects in strengthening the body and preserving it in sound vigour, commenced Physician: his only panacea, which, unfortunately, he administered at random in every disease, Fevers not excepted, was exercise, frictions and baths; but his rules in the administration of those remedies have not reached us. Such medical auxiliaries, however simple in appearance, we must allow, are not only extremely conducive to health, but also to remove several chronic diseases, had they not been applied indiscriminately, and their virtues, as is the case with most remedies on their first introduction, extravagantly magnified. Academies for exercise were from that time erected in all the towns of Greece, with baths and other conveniences for frictions and unctions of the body. Rome several centuries after, in imitation of her mistress in science and arts, erected sumptuous gymnasiæ, venerable monuments of which remain to this day, and give us a high idea of their primitive cost and magnificence.

To this gymnastic empiric succeeded Hippocrates, upon whom posterity, with unanimous suffrage, have conferred the appellation of the Father of Medicine. He was born in a small Grecian Island of the Archipelago, called Cos, had studied Physic under his father, and, we are told, under Herodicus also, and died, at an old age, 360 years before the birth of Christ. Hippocrates made the first successful attempts to separate the medical profession from rash empiricism, and from the frivolous dreams of the Philosophers, to establish it upon a rational

tional foundation, and to render it beneficial to mankind. From his works indeed we learn; that Physicians lived long before him in Greece, Fevers had been distinguished into their different genera, and he speaks of medical consultations : his predecessors however had made very inconsiderable progress in Medicine, and it became necessary for him to begin almost from the foundations.

HIPPOCRATES compares the human body to a circle, no part can be called the beginning nor end : this reasoning he applies to diseases, where the derangement of one function involves many others in disorder. The head is affected by disorders of the stomach, and, “ vice versa ;” the skin and extreme parts are governed by the same sympathy, and communicate their sufferings back again to the internal organs.

HE examines the effects of the air, whether cold, hot, dry, or moist ; of the winds, blowing from different points ; the effects of different regions and habitations of men ; of the different seasons of the year, of the Solstices, Equinoxes, the rising and setting of Stars, and their respective influence upon the human body. He compares the seasons with respect to health, and remarks what diseases are most prevalent during each season. In one chapter he gives a sketch or annual journal of the weather and seasons, and the predominant diseases. He examines the effects upon the constitution of sleep and watching, of hunger and thirst, of exercise and indolence, of the excretions and retentions, and of the

passions of mind, and lays down precepts for their regulation. He is very minute in determining the nature and qualities of different foods; of flesh, and of fish taken from fresh and salt waters, of fowls and the feathered tribe, of vegetables and fruits, of wines and waters. Under the article of flesh meat we find that of dogs, horses, and asses; from which many have been led to suppose that these made a part of the Grecian diet. Herodotus, in his narration of the customs and diet of the Persians, says, "That oxen, camels, horses, and asses, were annually roasted entire in rich men's houses upon their birth-day."

HIPPOCRATES enquires into the nature of the diseases to which different periods of life are most subject, comprehending Infancy, Puberty, Manhood and Old-Age. He cannot be said to have classed diseases in any regular nosological order: he makes a few distinctions only of diseases, as affecting different humours, and different parts of the body, and of Acute, Chronic, Endemic, Epidemic, Hereditary, Malignant, Female and Surgical diseases, &c. The Acute diseases he pronounced the most fatal to mankind. He attributed the most general causes of Epidemical Fevers to certain impurities and changes in the air which affect men, however different their food and manner of life. He ridiculed the superstitious notions of diseases originating from the divine displeasure, and the practice, then in use, of magical incantations in the cure of the Epilepsy. Very few diseases, then known, whether medical or
sur-

furgical, have escaped his notice and discrimination: a bare catalogue of their names occupies ten quarto pages in Le Clerc's History of Medicine.

THE great eclat of Hippocrates's reputation arose from his predicting the crises, termination and event of diseases. The Chapters called Prognostics, Predictions, Coacæ, Prænotiones, and Aphorisms, contain the essence of those admirable rules; in which are united an accuracy of observation, a rigid sagacity of judgment, that to this day stand unshaken and unrivalled. To form sure predictions, Hippocrates directs to attend to the seasons, to the nature of the disease, and to every circumstance about the sick: he attended particularly to the respiration, but the pulse he considered, for many reasons, a doubtful criterion, and seldom adverts to that sign. In most diseases, but especially in Fevers, he regarded, with scrupulous exactness, the countenance, eyes, voice, speech, gestures, the excretions by stool, by urine, by sweat, by vomiting, and by spittle, the respiration, the sleep and watching, the appetite and thirst, the weakness, strength, spirits, the tongue, the external and internal senses, the manner of lying in bed, and every action of the sick person, and lastly the critical days. From all those signs, weighed together and compared, from constant habit, and seldom interrupting the process of nature, in febrile cases, by internal Medicines, Hippocrates was enabled to predict the duration, crisis, event, and various terminations of diseases, with prophetic precision. He alledged, that

that certain diseases might be portended by a person's dreams.

HIPPOCRATES believed, that most febrile diseases were cured by some evacuation, either by stool, urine, or sweat, or by the mouth, and that a crisis ensued on particular days in preference to others. The critical days in Fevers, reckoning from the first attack, were the fourth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth: here, it is evident, are both even and odd numbers. Crises, which occurred upon any other days, he held to be imperfect, and the sick subject to relapse. Of all the numbers, seven was thought the most powerful, and was called the harmonic number, a doctrine first suggested by Pythagoras. Hippocrates, celebrating the powers of the number seven, says, "*Per septem
" figuras cognitio habetur, sensatio homini con-
" tingit, auditione soni percipiuntur, visione mani-
" festa cernuntur, nasus odores, lingua suavia et
" insuavia discernit, os sermonem format, cor-
" pore calidi et frigidi tactus percipitur, spiri-
" tus intro et foras permeat, et per hæc homi-
" nibus cognitio contingit.*" We know there are just seven fundamental tones in Musick, and seven original colours, or rays of light, which without the assistance of prisms, the Greeks might have perceived in the rainbow. The Ancients were not ignorant of the Musical Scale, though it is agreed, they were unacquainted with the modern enharmonic system: nor before the days of Newton, had

had the latter doctrine of the seven visual rays been demonstrated. The Greeks imagined, that the primordial colours resided in the objects themselves, and were inherent in the four elements.

HIPPOCRATES drew blood by the lancet, and by scarification and cupping-glasses. His vomits and purgatives, unless administered in very small doses, were extremely rough and violent, such as the White and Black Hellebore, Elaterium, Scammony and Colocynth. Asses milk and salt mixed was a mild laxative used by him, together with Clysters and Suppositories. To ease pain and procure sleep he sometimes administered the juice of Poppy, or the Meconium. His internal prescriptions consist of few ingredients. Le Clerc has enumerated, in alphabetical order, the intire Pharmacopeia of Hippocrates: the whole catalogue of medical simples amounts to a very inconsiderable number. He and all the ancient Physicians are scrupulously minute in the Dietetic part of Medicine, and in regulating the proper time for administering food and drink to sick persons. In every case, whether in health or in disease, both in diet and drink, he made allowances for custom and habit, and for the difference of climates. To maintain sound health he discouraged too exact and methodical a regimen.

VERY few internal remedies were prescribed by Hippocrates in Fevers; his practice in them is exceedingly simple: he intermeddled with extreme caution, fearful of interrupting the progress of nature, whilst the humours were crude, not thoroughly

roughly concocted, and prepared for expulsion. When this process was finished, he supposed that nature attempted, by some evacuation or crisis, to eject the offending matter. The modern discovery of Antimonials and Bark have, in a considerable degree, overturned this ancient Theory, and the timid errors of such practice. In continued and Remittent Fevers he seems to have been a spectator, and to have sat at the bed-side, registering good and bad symptoms, trusting all to the efforts of nature, and from her struggles prognosticating the event. This gave occasion to the sarcasm of Asclepiades, who lived some centuries after at Rome, and who compared Hippocrates's practice to a meditation on death. His principal remedies in the above genera of Fevers consisted in regulating the diet and drink. During the accession of a paroxysm or cold fit, all food was withheld, until a general diffusion of heat to the extremities ensued. Barley, or other grain, boiled with water, were given as ptisans, and honey, vinegar, and water, or often an infusion of various herbs: these meagre diluents served principally for food and drink: in summer, if nothing prevented, they were given cold. If the sick person was low and weak, wine was constantly prescribed as the most invigorating cordial. He generally recommended a clyster to unload the intestines. A number of cases in Epidemical Fevers, are preserved amongst his works, and in the examples there exhibited nature appears to have been too often an unsuccessful

cessful Physician. In several genera of Fevers he recommended a warm bath at the beginning, or to wash the body with warm water. In Quartan Fevers he prescribed Sternutatories, Vomits, Purges, Warm Baths, Sweating, and some internal remedies.

In internal topical Inflammations, he bled more or less according to the violence of the disease and of the pain, and of the age, strength, and vigour of the patient. In the Pleurisy he also applied to the pained side salt warmed in a woollen bag, and sometimes a bladder filled with warm water, or a sponge wrung out of hot water. In the Peripneumony or Inflammation of the Lungs he recommended a warm bath, and diluting watery infusions to be gradually drank or sipped, and such as would promote expectoration and urine: the infusions of several plants, mixed with honey and vinegar, were well calculated for this purpose. The utility of the warm bath he says is to soften the skin and joints, to promote urine, and to open the excretory passages, to refresh, and to dissipate heaviness of the head. In some species of Pulmonary Consumptions he prescribed a vomit, some pectoral infusions and fumigations, and sometimes sternutatories: birds and soft cartilaginous fish were permitted to be eaten: acrid food, surfeits and venery to be avoided: moderate exercise by walking was enjoined, but not in the heat of the sun, nor in windy weather: in the last extremity, he burnt the chest and back in several places with a hot iron so as to keep open ulcers and a discharge.

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IF a collection of matter or Empyema in the breast succeeded a Pleurisy, Peripneumony, or Consumption, he pulled out the tongue, then forced a liquid down the throat so as to excite a Cough and burst the Abscess: when this failed, he ventured to make an opening in the side to give the matter a discharge: in this complaint he also administered Sternutatories. In the Angina he bled in the arm, and if necessary under the tongue, gave a clyster, ordered warm steam and fumigations to be inhaled by the mouth and nose, and warm gargles to relax and to promote the flow of Saliva. In the Ileus, or Inflammation of the bowels, accompanied with obstinate constipation, he bled, (and what is justly condemned, vomited) placed the patient in a warm bath, the belly and lower parts were kept warm and anointed with warm oil, Clysters were given, sometimes air was blown into the anus, and immediately after a Clyster injected; Suppositories also were introduced.

IN one species of chronic Head-ach, he directed fomentations to the head, and Sternutatories of the juice of certain plants, or of hellebore, and if the disease still proved obstinate, he opened the veins either in the temples or forehead, or burnt those parts, or the nape of the neck with a hot iron. In watery defluxions of the eyes, the iron was applied to the same parts as in head-achs. Herodotus relates, that in Egypt the mothers burnt the temples of their chil-

children with greasy sheeps wool to cure ocular defluxions. In the Tetanus and Locked Jaw he anointed the body frequently with warm oil, and administered Sternutatories. The recent Gout in young men he thought might, by regimen in diet, and by exercise, be prevented: if of long standing, and in old men, he thought a radical cure impracticable. In the Gout, Sciatica and fixed Chronic pains, he made frequent use of the hot iron, or burnt an ulcer with lint or mox over the seat of the pain: this is an ancient practice familiar in India, China and Japan. In Dropsies he purged, prescribed in food diuretick vegetables, solid diet, little drink, and much exercise. Amongst the diureticks he mentions onions, garlick, leeks, fely, parsley, cucumbers, melons, fennel, honey, sweet wine: in some cases he gave a violent and dangerous diuretic, cantharides. If the disease continued rebellious, and the water was lodged in the external cellular membrane, punctures were made in the skin, if in the Abdomen or in the breast they were tapped. In Ulcers of the kidneys, during the fit of pain, he ordered the warm bath, and fomentations to the external region of the loins, gave sweet wine diluted, and for common drink milk and whey. In a nephritic paroxysm, where sand or small stones were lodged in the kidneys or urinary passages, he likewise ordered the warm bath. In one species of Jaundice he prescribed the warm bath, a purgative, and diuretic vegetables in food, wine, &c.

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He describes various diseases of the liver and spleen, and the different methods of cure to be pursued in each genus.

HIPPOCRATES dwells upon female diseases with unusual prolixity: he considered the Uterus as the cause of all the complaints peculiar to the fair sex. He describes the *Obstructio* and *Profluvium Menstruum*, and various species of the *Fluor Albus*, the *Cancer* of the Uterus, the *Procidentia Uteri*, the *Hysteria*, &c. In immoderate menstruation he directed astringent Pessaries to be introduced into the Vagina, cupping glasses to be applied to the breasts, to lay in bed with the feet elevated, to use as little motion as possible, sponges dipped in cold water to be frequently applied to the lower part of the Abdomen, and to the private parts. In the *Hysterical* paroxysm he ordered a tight bandage to be rolled round the belly, fetid substances to be held to the nose, sometimes he excited sneezing, and in the intervals gave castor internally. Fumigations and warm vapours from various ingredients were conveyed through a funnel into the Vagina, both in *Hysteria* and in female obstructions, and in both diseases Pessaries were introduced: but the most effectual remedy, in Hippocrates's opinion, was to indulge the intentions of nature and to light the torch of Hymen. A prodigious list of ingredients used in the composition of Pessaries, of injections, and of fumigations for the Vagina and Uterus, and also a variety of internal potions and mixtures for these different diseases

female diseases may be found in this Author. He assigns several causes, and prescribes several remedies for Sterility, and for Abortion. He describes the symptoms of true and false conception. To promote delivery, if languid, and where the fetus presented in the natural position, that is with the head foremost, he directed sternutatories, and violent concussion of the woman during the pains of labour. When the arm, leg, or breech presented, he returned them back, and endeavoured to turn the fetus so as to present the head, which is the reverse of the modern practice. He extracted the dead fetus, in difficult labours, by a crooked hook or crotchet, and sometimes in fragments. During the pains of labour, he applied fomentations to the private parts. In Inflammation of the Uterus, after delivery, he ordered fomentations, cataplasms, sometimes a warm bath, low diet, &c; and in sudden suppression of the Lochial discharge, purgatives, or clysters, fomentations, warm baths, &c.

THE most valuable and laboured part of Hippocrates's Surgery, is that relating to Fractures, Luxations, Ulcers, and Fistulas : it is indeed the basis, at this day, of modern Surgical practice, in such accidents and diseases. He directs the extension, the reduction, the bandages, and the splints proper in Fractures and Luxations of different bones, and of whatever species, or nature, and several inventions and machines, to increase the extension, when necessary ; he directs the laxity and tightness of the bandages, the intervals for unloosing and

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binding

binding them on again, the position and repose of the fractured member, the regimen and diet, and mentions the time when a callus is usually formed. The useful parts of his directions in fractures of the Scull, and the application of the trepan, and in Ulcers and Fistulas, are copied by Celsus: to prevent repetitions, I must refer the reader to turn over to that Author, where I shall likewise take notice of a few of Hippocrates's emollient and discutient cataplasms and ointments. Amongst his Escharotics to foul Ulcers and fungous flesh, we find Alum, Nitre, Verdigrease, and Quicklime, and a profusion of external applications and compositions.

WE are now approaching to parts of this great man's works, many of which will not sustain a severe critical scrutiny. His Theory of the Proximate Causes of Diseases is perplexed and bewildered in mixtures of four suppositious primary humours, blood, pituita, yellow bile, black bile, or melancholy. Human bodies were conjectured to be made up of those four elements, and diseases to depend on their degeneracy, disproportion, or improper mixture, especially the two biles. Their qualities were said to be heat, cold, moisture, and dryness. The doctrine of four primary elements, fire, air, earth, and water constituting all bodies in nature, had been originally broached and maintained by Thales and by Pythagoras.

MODERN Anatomists cannot avoid pronouncing the Anatomy of Hippocrates to be gross and imperfect

fect. Human bodies had not then been dissected, and his knowledge upon this subject (except perhaps the Osteology) was acquired by opening animals of the brute creation ; some of whom, as the Ape and Monkey in their internal structure, bear a strong resemblance to man. Notwithstanding such radical impediments to obtain correct Anatomical ideas, he has given a coarse superficial description of the Lungs, Heart, Stomach, Liver, Spleen. Kidnies, Ureters and Bladder, and of the large trunks of the Blood-vessels. The Osteology excels every other part of his Anatomy. He says nothing more of the Muscles than that they are instruments of motion. He knew that the brain was the primary spring of motion and sensation : the blood too he knew nourished the body, and he imagined was the source of heat ; but he was totally unacquainted with the rotatory circulation of that fluid. He said that the rudiments of male and female embryos were contained in the semen of both sexes.

HIPPOCRATES's language in general is uncommonly concise, and from that cause often obscure : it is far inferior in composition or elegance to some of his predecessors, or to many who succeeded him. There are contradictions and flimsy remarks, besides a confused medley of several diseases, unknown to and undescribed by posterity, which gives room to believe, that additions and alterations have been made after his death, and that some parts are spurious. In many places, we must confess, he teems with useful maxims and in-

formation. In attending to diseases, throughout all their changes and meanders, he was vigilant and indefatigable, his judgment profound and correct. His conclusions and predictions are, notwithstanding, often built upon a single symptom; but to presage future events, in conformity to his own rules, a more comprehensive survey should be made of the disease, the remaining powers of the constitution, and the probable success to be expected from Medicine. His Aphorisms begin in the usual stile, of which I before gave a specimen. “*Vita brevis, Ars longa, occasio preceps, experientia fallax, judicium difficile,*” &c. The Latin is put in place of the original Greek, which is still more compendious, and the diction adorned with greater majesty. Throughout, his language is close and compressed; and on most subjects he is defective in arrangement, perspicuity, and elucidation. To beginners in Medical Studies he would be dry and frequently unintelligible. His writings resemble rather a register or a store house of solid facts heaped together, than a pleasing narrative. He may, I think, be compared to our Bacon, Lord Verulam: the one is in Physick what the other, in modern times, was in Philosophy. Hippocrates first pointed out the true road to arrive at Medical knowledge, and made a beginning in almost every branch of Medicine, although he brought none to perfection. In so short a time he did wonders for one man: but the fabric of Physick was infinitely too large and extensive for a single person to finish.

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Hippocrates has the immortal honour of having furnished the first model, which others in the course of successive ages have imitated and greatly surpassed.

HIPPOCRATES describes the duty and office of a Physician, and lays down rules for his deportment and manners. He practised in every sphere of healing, he acted occasionally as Physician, Surgeon, Apothecary, Acocheur, and even as a Nurse: it appears too, that he travelled through most of the Greek towns in the exercise of his profession. Athens decreed him a golden crown, and sumptuous presents, on account of some eminent service done to that State, when invaded by a pestilential disease. Artaxerxes, an Asiatic monarch, solicited him in pressing terms, and by offers of princely rewards, to pay a visit to his camp, and to direct him how to stop a contagious sickness, which preyed upon his army. Hippocrates, we are told, rejected his offers, because he was the enemy of Greece. Their epistolary correspondence, the authenticity of which has been doubted, is inserted in the works of that venerable patriarch of Medicine.

DEMOCRITUS, the intimate friend of Hippocrates, had travelled for information into Egypt, Persia, and part of India, and in his retirement afterwards performed a variety of experiments, and dissections on brute animals. He also wrote on a vacuum, on gravity, and on the primary elements. An extreme recluse mode of life, and
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the singularity of constantly laughing, a species, perhaps, of affected pedantry, made the Greeks for some time to consider this eminent Philosopher as a madman. Had mankind, however, in their future pursuit of knowledge, followed the example of Hippocrates and Democritus, instead of Plato and Aristotle, at this day they would have been much wiser.

PLATO and Aristotle succeeded Hippocrates about fifty years. Those two authors, if we may adopt the sentiments of the learned Lord Bolingbroke, invented systems more baneful to truth and real learning, than the ravages of the Goths and Saracens. Plato turned Natural Philosophy and the study of knowledge, into metaphysical and chimerical subtleties; Aristotle into captious disputation, logical quibbles, syllogisms and scholastic jargon. Each of their systems were fashionable, and flourished not only in Greece, but continued to assert their empire in the schools of Rome, and through all the dark ages of Gothic, Arabian and Ecclesiastical barbarity; and were interwoven into the different systems of literature. They diverted mankind from pursuing the only certain road to knowledge, experiment and observation.

ARISTOTLE officiated as Preceptor to Alexander the Great, and, at the desire of that monarch, compiled a system of Natural History. Hunters, fishermen and husbandmen, throughout the extensive regions of the Macedonian empire, were

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ordered to give their assistance in collecting materials for this work. It contains several chapters on the dissection and structure of various animals, fishes, birds and insects; on the structure, and uses of their different organs; on their generation, parturition, food, habits, modes of life, and diseases. This is the most antique model of Natural History, that has survived the ravages of time, (the Botanical part has not been so fortunate) and amongst many errors, are interspersed a variety of facts and excellent observations. His queries and problems respecting Medicine, and various other sciences, were texts which likewise excited the curiosity and criticism of posterity.

ANOTHER, and the most ancient Naturalist of the Botanical class, whose works have descended to us, is Theophrastus, one of the disciples of Aristotle. His observations, however, have very slender connection with medicine; they are principally directed to explain the structure of plants and trees, their culture, propagation, growth, differences and diseases; and in the whole, comprehend a few hundred only of the vegetable class.

SOME faint glimmerings of anatomical knowledge were now rising to illuminate Medicine. Diocles, a physician, and the cotemporary of Plato, published written rules for the dissection of animals. Human anatomy commenced a century later with Herophilus and Erasistratus, the two Physicians on earliest record, who dissected human
bodies.

bodies. One was born in the island of Cos, the latter was by birth a Carthaginian : both removed to Alexandria to practise their profession, and to perform dissections, under the immediate patronage and protections of the kings of Egypt. Alexander the Great, it is known, upon his conquest of Persia and Egypt, founded the city of Alexandria, as the most central situation for trade in the whole world ; connected by a narrow isthmus of land to the Mediterranean and Red Sea, it was well adapted to become the great mart of merchandise between Europe and India. At Alexander's death, his extensive empire became a prey to the ambitious men who had assisted in his conquests, and the spoils were divided. Egypt afterwards, under thirteen Ptolemies and Cleopatra, subsisted in splendor, as an independant state, during three hundred and six years, when it fell under Augustus and the Roman yoke. Alexander's successors on the Egyptian throne, were all Patrons of Letters and Arts: the second Ptolemy had amassed two hundred thousand volumes at Alexandria, and that celebrated library was increased in every succeeding reign by books, purchased at an immense expence from all parts of the world, where science had made any progress. Alexandria continued many centuries after, the seat of Magnificence and Arts ; a renowned School of Medicine, and especially of Anatomy to both Greece and Rome.

WE read in Authors, that it required the despotic authority of the Egyptian Kings to restrain the public indignation, and to protect the first human Anatomists; the practice was looked upon with abhorrence, and condemned as a heinous impiety: from hence probably arose the report, handed down to posterity, and retailed by both Celsus and Tertullian, that Erasistratus and Herophilus had dissected criminals alive. Popular prejudice and the novelty of the enterprize might lead men to invent tales of savage barbarity, in order to render Anatomists more obnoxious. Human nature shudders at the bare mention of those infernal cruelties. If ever unfeeling monsters could have perpetrated such deliberate torments upon their fellow creatures, they would deservedly be the objects of universal detestation, and their memories should be consigned to everlasting infamy. I hope and believe that such bloody scenes were never actually executed, but by the vilest outcasts of society, hangmen, torturers, and other execrable monsters.

THE Egyptian practice of embalming shews with what anxious sollicitude they endeavoured to preserve the dead from dissolution and decay. It is an art certainly at present of very little importance to mankind, but which once formed a distinct trade in Egypt. Herodotus relates, that in his time, the most expensive mode of embalming amongst the Egyptians, was to draw out the brains through the nostrils by a crooked hook,

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and to fill up the cavity with gums: the bowels and softer organs were also taken out and washed in Palm Wine, in which odoriferous drugs were dissolved: they were again returned into the belly, and the empty space filled up with powdered Myrrh, Castor, &c. and the skin sewed up. The whole body was next laid in Nitre seventy days; then being washed, was bound round with silk fillets, covered with gums, and was finally placed in a frame of wood. The Ethiopian Grandees were inclosed in a hollow cylinder of fossil crystal. All the Egyptian Mummies imported to our Cabinets are wrapped up in several hundred yards of bandages, so that the corpse resembles a clumsy lump of greasy plaster cloths. The Egyptians, who lay buried in the chalky cavities of excavated catacombs, surrounded closely by dry absorbent earth, have been preserved several thousand years without decay; and from these mortifying relicks of human vanity, we learn, that mankind have continued nearly the same in stature.

Mr. Brydone, in his late tour to Sicily and Malta, informs us, that in some parts of Sicily, the skin and muscles of dead persons are hardened by a particular preparation like dried fish, and that in this state several hundreds have been preserved in subterranean cavities between two and three hundred years. On the summit of the high mountain, called Teneriff, the air is so dry and crisp, that dead bodies may be preserved there without any preparation or care. In our moist
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climate, the best method of embalming would be previously to inject the blood vessels, which would contribute both to preserve a plumpness and resemblance of life, and to prevent decay ; afterwards to take out all the internal soft and corruptible parts, and to fill up the cavities with gums and aromatics : the body lastly should be laid in dry earth or plaster of Paris, defended from the external air by a case and glass in the front, and artificial eyes may be inserted. From this short digression, I return to the two celebrated Anatomists before mentioned.

ERASISTRATUS's Anatomy of the Brain and Nerves far surpasses in correctness that of his predecessors : his description of the Ventricles in this organ is preserved by Galen. He discovered those white vessels in the mesentery called Lacteals, which convey the Chyle from the intestines to be carried into the blood, but was totally ignorant of their use and termination. He wrote treatises on the Pulse, and on the causes of diseases. His Pedagogue in Medicine Chrysippus had condemned purgatives and blood-letting, and the pupil imbibed the same prejudices against those evacuations : perhaps the strong purgatives then in use, the Hellebore, Scammony and Colocynth had been followed by bad consequences. In lieu of Venesection and Cathartics, he substituted abstinence and vegetable diet ; and in plethora or plenitude in excess, Clysters, Vomits, Exercise and Baths. He exclaimed against royal compositions, as they were pompously dignified, in which plants, animal substances and minerals were heaped

toget-

together : he also declared himself against superfluous sophistry in Medicine. After his death, some of his disciples established a Medical school at Smyrna. Herophilus, his rival in Anatomy, and the pupil of Praxagoras, made more use of internal Medicines, both simple and compound : he demonstrated the nerves proceeding from the brain and spinal marrow, and two coats of the eye : he mentions a palsy of the heart, as sometimes the cause of sudden deaths. The works of these two Authors are now lost, but numerous fragments of their practical precepts are preserved in Cælius Aurelianus and in Galen.

DURING the era of Herophilus and Erasistratus, Medicine and Surgery, which in Greece had been practised by one person, was separated into three distinct provinces, the Dietetic, Pharmaceutic, and Surgical. Those appellations do not exactly correspond with the present divisions of the Medical profession. The Surgeon then simply performed the manual operations, and was confined to the mere exercise of the knife ; he did not even treat Ulcers, Wounds or Tumours, they were committed to the Pharmaceutic branch : the Physician regulated diet, and prescribed Medicines when he thought them necessary. Two sects were also then formed in Medicine, the Empiric and Dogmatic : each appears to have entertained a greater zeal for his own party, than for the cause of truth and of the public, and like all literary factions, carried their opposition to absurd extremes. The

Empiric

Empiric was the declared foe to all reasoning : the Dogmatist, on the contrary, pretended to unfold the most impenetrable secrets of nature ; and with his scanty pittance of Anatomy, Philosophy and views of Nature, had the presumption to decide upon elementary principles, to account for the most intricate functions of the body, and the primary causes of diseases. It is not at all surprising, that the Empirics should be disgusted with this nonsense, and were precipitated into a contempt for all reasoning and enquiry into human Physiology, and into the causes of diseases. Those who are desirous to judge of the merits of the Dogmatic and Empiric sects, at least in disputation, may consult Celsus. The arguments of each are by him stated impartially, but in the present improved state of Medicine, are become obsolete and inapplicable. No Medical sect now exists, according to the original definition and contracted views of the first Empirics, except amongst Quacks and Mountebanks : neither are there any sterling Dogmatists, in the strict meaning of the word, except amongst men haunted with waking visions, whose distempered brains are filled with monsters and chimeras.

HERACLIDES of Terentum, the disciple of Aristotle, is called the principal of the Empirics ; and Serapion of Alexandria, their original founder : Glaucias and Apollonius are also numbered amongst them. In describing the essential or diagnostic symptoms of diseases, the good and bad effects of
Medi-

Medicines, or the lædientia & juvantia, the Empirical writers have been very exact. Upon this sect the methodic which we shall presently meet with at Rome, was engrafted. Heraclides examined the Medical virtues of various plants, minerals and animals. Cælius Aurelianus has collected his Medical precepts, together with a later author, Soranus, which otherwise would have been lost. Most of the ancient Surgical writers from Hippocrates, have shared the same fate, but their essence will be found in Celsus.

THE chain of Medical writers is now broke, and a few links effaced : the injury however which we sustain from that cause, is not of so great consequence as might suddenly be conjectured. Most of the ancient Medical fragments, the originals of which only are now perished, have been recorded in the works of some later authors of Rome, and other parts of that large empire. We shall take up the chain again about sixty years before Christ appeared in the world.

C H A P. IV.

Of Rome, the Physicians and Writers in that Capital, and in other parts of the Roman Empire. A few select Greek Writers on Medicine and Surgery, during the Decline and Three last Centuries of this Empire, and about a Century after its Fall in Italy.

IF we believe Pliny, the naturalist, Rome was built six hundred years before any Physicians established themselves in that city. Dionysius Halicarnassus may be opposed to the authority of Pliny. This Author says, “ That three hundred “ years after the foundation of the capital, a furious “ Plague swept away great part of the inhabitants, “ slaves, and citizens, and that the Physicians were “ too few for the number of sick.” The Roman Physicians probably were but a sort of illiterate Empiricks, and Pliny might think them undeserving of any regular title. Arcagathus, a Greek, is mentioned by Pliny as the first foreign Physician, or rather Surgeon, who practised at Rome, (U. C. 535.) This stranger, he adds, employed so frequently the knife, and hot iron, he cut and burnt with so much cruelty, that the Romans gave him the opprobrious appellation of hangman, and conceived an aversion to the Medical profession.

ASCLEPIADES, about one hundred and thirty years after, is the second stranger who exercised
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Medicine in the Roman Metropolis: a man we may conclude of some distinction, from his being admitted to the intimate friendship of Cicero. Pliny remarks, that notwithstanding the great profits acquired by Medical practitioners, when Rome had grown into a stupendous capital, and was enriched with the spoils of various nations, yet very few Romans studied the Science: the only two writers of any note, of Italian extraction, are Celsus and Pliny. Cicero assures us, that until his days the Romans despised Philosophy. Marcus Cato, in a letter to his Son, then compleating his studies at Athens, expressed his fears and apprehensions, that the liberal Arts and Sciences of the Greeks, including in these Medicine, when compleatly introduced into Rome, would corrupt the Romans. A little attention to the history of that nation will enable us to solve many doubts and difficulties which have embarrassed this subject: it would otherwise be impossible to pursue distinctly the progress and future catastrophe of Science and Medicine.

ALMOST five hundred years of the Roman Republic were spent in poverty and incessant domestic wars. In 489, U. C. the Samnites, the only surviving rival state, was subdued, and all Italy now took laws from Rome. Then began a foreign war against Carthage. Before the second Punic war, the Temple of Janus was shut (a sign of peace) for six years only. Livy observes this had
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happened but *once* before in the space of five hundred years ; and that the spoils of Syracuse, the beautiful capital of Sicily, which was ransacked in the Carthaginian war, and in which the celebrated Mathematician and Mechanical genius, Archimedes, lost his life, gave the first beginning of that taste, which the Romans acquired for the Greek arts. Five ages were now elapsed since Romulus, with a small banditti of shepherds and outlaws, had laid the foundations of Rome. In the two succeeding centuries, and part of the third, they conquered immense possessions in Europe, Africa, and Asia. Eager and impatient to dazzle the world with the splendor of their arms, and to impose the galling yoke of subordination, the globe was ravaged by their ambition and rage for conquest. Neither Study, Speculation, nor Letters, were suited to their disposition and military education. Conquest, and the destruction of mankind, was then thought the height of virtue and human excellence.

ABOUT the era of Augustus and the birth of Christ, which correspond with 752 from the foundation of Rome, that haughty people, who had incessantly violated the rights of other nations, were, by a rapid succession of conquests, in possession of the fairest portion of the earth, and an astonishing list of potent states were annihilated in the Roman empire. Before the end of the second century of the Christian era, during the splendor of Trajan and the Antonines, all the mighty civi-

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sized kingdoms of antiquity (Persia, India and China excepted) were swallowed up in the Roman empire, and the number of its inhabitants were computed to be equal to the present population of all Europe. The northern part of our hemisphere, where powerful kingdoms are now erected, was then a frightful wilderness: the Roman barrier to the north was generally terminated by the Rhine and the Danube.

FOREIGNERS of various professions and arts from the remotest provinces, attracted by its riches and renown, were now received into the capacious bosom of Rome. All the liberal arts had been gradually imported from Greece to Italy: from that native seat of the Muses and Arts Rome drew her Poetry, Rhetorick, Logic, Music, Architecture, Sculpture, her Laws, Learning, and Refinement. Medicine appears to have followed the train of other Sciences in Rome, to have arisen and fallen with them. Plautus, Terence, and Lucretius, succeeded Arcagathus: Asclepiades was the contemporary of Cicero and Cæsar: Celsus of Horace, Ovid, and Virgil. This is the Augustan age, which gave birth also to Livy, Varro, and Vitruvius. Pliny and Galen succeeded Tacitus, and flourished in the second century of the Christian era, before the end of which Rome had attained to the full maturity of Science and Military fame. From this period the Empire begins to decline, and in less than four hundred years after,

Italy

Italy and the Western hemisphere was crushed in ruins by the Northern barbarians:

IN Cæsar's time, the number of books which adorned the Alexandrian library exceeds almost credibility. This monument of the taste of the Egyptian Kings was in part involuntarily destroyed by that conqueror. During the war at Alexandria, Cæsar was under the necessity of preserving himself and his army by setting fire to the Alexandrian fleet, when unfortunately the flames communicated to this renowned library, and four hundred thousand volumes are said to have perished. In a short time, however, by the library of Marc Anthony, and the liberality of Cleopatra, it regained its ancient splendor; and until the time of Mahomet's successor, six hundred years after, this noble collection continued at Alexandria. The libraries of some great and rich Romans in the second century were grand and expensive: that of Gordian, a citizen of noble birth and immense riches, who afterwards was elected Emperor, is said to have contained sixty thousand volumes.

THE state of Medicine and Surgery, and the improvements which they received in the Roman Empire, shall now be the subject of our enquiry.

ASCLEPIADES (U. C. 690, A. C. 62) of Bithynia, first gave lectures on Eloquence and Rhetoric at Rome: in this Science he is allowed to have possessed considerable merit, and from those qualifications probably recommended himself to the intimate friendship of Cicero. Shortly after

he resigned the chair of Oratory to commence Physician; a profession, we may fairly presume, from this circumstance, not less lucrative. Whether Asclepiades acted from conviction, or meant by the singular novelty of his doctrines to attract the public attention, seems doubtful: certain it is, he introduced several innovations into the theory and practice, and overturned a great part of the Hippocratic Medicine. Health, in his new system of conjectures, was said to depend upon the proportion and size of the pores, and of the atoms or little corpuscles which pass through them: a disproportion in either produced disease. Democritus sowed the seeds of this Philosophy, if such it deserves to be called, and was followed by Erasistratus. In Fevers, topical inflammations and pains, little atoms were supposed to obstruct the pores: in Dropsy the pores were said to be too relaxed. All his remedies were directed to remove those two imaginary causes of diseases: obstruction was assailed by gestation, frictions and exercise of various kinds, as sailing, and when more gentle, suspended beds, admitting of agitation. He is reported to have been the inventor of a hundred new sorts of baths. In the beginning of Fevers, Celsus says, he treated his patients like a hangman, refusing them all kinds of sustenance, or even drink, and preventing them from sleep: this had been the practice of Heraclides: those severities were continued during the three first days of sickness, but after that period he gratified

tified all their cravings. In opposition to the practice then in vogue, he proposed to cure all diseases, “*tuto, cito, & jucunde.*” Sometimes he mixed salt water with wine, (a favourite remedy of his in most diseases) pretending that the salt would penetrate further and open obstructions: he gave salt water also in the Jaundice. He bled in a Pleurisy, but not in a Peripneumony, because there was less acute pain in the latter, and according to his Theory, less obstruction. In imitation of Chrysippus and Erasistratus, he proscribed vomits and purges: he imagined they dissolved the humours; but he frequently prescribed Clysters to remove costiveness. He ridiculed the doctrine of critical days in Fevers: the Physician’s business, he said, was to remove the Fever without trusting to the tedious and precarious efforts of nature. He banished almost all internal Medicines from his practice, and depended principally upon regulations of diet, friction, gestation, exercise, and baths. In some cases he had recourse to charms and incantations.

ANTIQUITY held this man in high veneration. His Rhetorical talents, address and knowledge of mankind, enabled him to give a specious gloss to his greatest absurdities. Celsus confesses to have taken some good hints from him: in Fevers his practice is nearly a copy of Asclepiades. Pliny, in my opinion, draws his true character in a few words, wherein he dubs him an illustrious Empirick: to whom it is but justice to add, that Medicine owes some obligations and powerful

remedies: nor are some of his remarks in Philosophy and Medicine destitute of originality and merit. He is reported by his contemporaries to have been proud, ambitious, bloated with envy and conceit, and affected to hold all other Physicians in great contempt, and when consulted was sure always to traduce and to reject their prescriptions. Such uninteresting anecdotes serve at least to account for certain extravagancies in his Medical practice and writings.

THEMISON, a disciple of Asclepiades, conceiving some dislike to his master's system, erected a new sect called the Methodic; or in other words, an easy and short method of attaining Medical knowledge. The Empirics had abridged part of the labour of the Dogmatists, by excluding not only proximate causes, and all abstract reasoning, but even evident causes from their system. The Methodists cut the matter still shorter, and by one bold leap reduced all diseases to two heads or classes: the one from overbracing; the other from an opposite fault, relaxation. All remedies were supposed either to brace or relax, and the particular diseases under each class to require nearly a similar treatment: a third or mixt class was also added, wherein "Strictum et Laxum" were compounded. Such ridiculous fancies, in the present enlightened days, are beneath discussion or serious refutation. Sects were then the fashion: Cæsar was an Epicurean, Cato a Stoic. Themison invented the form of a useful purgative, still
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in use, compounded of aloes, saffron, a few warm spices and aromatics, and by us called "Hiera Picra:" upon the basis of this a Tincture is now extracted by wine. I believe he is the first who directed leeches to evacuate blood, and to be applied to the temples in head-achs.

THESSALUS, many years after, made some additions to the doctrine of Themison, and his system was greatly relished, because it could be learnt in a short time, and required very little experience. He boasted to his pupils, that he would abridge the study of Medicine to six months: the whole mystery consisted in bracing and relaxing the solids. Gil Blas is the only commentary or criticism I should recommend upon such systems. Thessalus was, notwithstanding, in the first repute at Rome, so ill founded often is popular applause, especially in the Medical profession. Pliny says he never could appear in public without being attended by a numerous crowd, and that he wrote more gross volumes than could be read in six months, the ultimate term affixed by him to Medical studies. He too decryed purgatives, and established abstinence from food during the three first days of sickness as a fundamental rule. Galen draws an unfavourable portrait of Thessalus: he asserts, that the latter raised himself into consequence and practice by assiduity, complaisance and flattery of the great, and by extreme impudence. His personal conduct is of no importance

to posterity. Theſſalus appears to have entertained a thorough good opinion of his own talents, and has drawn his own character in the Epitaph which he ordered to be engraved upon his tomb ſtone, “ Here lies Theſſalus, the conqueror of “ Phyſicians.” We may ſet him down as an impudent Empiric.

THE Methodic ſect ſubſiſted ſeveral centuries in great reputation. They deſcribed the ſymptoms of diſeaſes with peculiar correſtneſs, but neglected the ſtudy of Anatomy and Phyſiology: nor in practice did they beſtow any material attention to age, ſex, cuſtom, habit, climate, ſeaſon, &c. They gave themſelves no concern about the condition of the fluids, alledging that the conſtitution in moſt caſes, was deranged by either too great tenſion or flaccidity of the ſolids. Three more ſects ſprung from theſe different roots of the Empiric, Dogmatic and Methodic, and were called the Epifynthetic, Eclectic and Pneumatic.

CÆLIUS AURELIANUS, an African of Numidia, contains the completeſt ſyſtem of the Methodic theory and practice now extant: he is ſtiled the copyiſt of Soranus, a Phyſician who lived under the emperors Trajan and Adrian, in the ſecond century, the eſſential part of whoſe writings are tranſcribed and preſerved by Cælius. In many caſes Cælius deviates from the original rules of Medical methodiſm, as arraigned by Galen, and mentions the remote, or manifeſt cauſes of diſeaſes, and ſometimes he animadvertſ upon the pulſe.

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In what part of the Roman Empire Cælius practised Medicine is not agreed. His language is coarse, provincial, and replete with barbarisms. I have introduced him before Celsus, who lived, at least, a century and a half earlier, in order to dismiss the writers of this particular sect. In his works there are various criticisms on the practice of Diocles, Praxagoras, Heraclides, Herophilus, Erasistratus, Asclepiades, Themison, and Theffalus, of which we should otherwise have remained ignorant.

CÆLIUS distinguished a number of diseases accurately. He describes the symptoms of Phrenitis, Catalepsis, Lethargy, Epilepsy, Apoplexy, Palsy, Tetanus, different species of Madness, and Hydrophobia, of the Quinsy, Pleurisy, Peripneumony, Phthisis Pulmonalis, Atrophy, Cachexia, Asthma, different genera of Dropsies, of the Jaundice, Elephantiasis, Gout, Ischias, Nephritis, Iliac Passion, Passio Cardiaca, diseases of the Stomach, Worms, diseases of the Urinary passages, and of the Genitals. His classification of these diseases was strictly Methodical. They were distorted and dragged into unnatural arrangements, and comprehended under three general Classes, "Strictum, "Laxum, and a third or mixed Class, partaking "of the nature of both the former."

DURING the first three days of sickness, Cælius prescribed a rigid abstemiousness in diet. He was equally circumspect as to the quality of the element used in respiration. To refresh the air, the branches of various trees, shrubs, and flowers were placed in the room, in order to medicate it with different

exhalations, according to the nature of the disease. Minute directions were also given about the beds of the sick, whether they should lie on feathers, or on a single mattrafs. At the end of every disease, he prescribed exercise and various kinds of gestation and frictions. He reprobated the specific remedies in vogue in those days, consisting of various inert materials, some sufficient to excite contempt, others horror.

Cælius often gave Vomits, but purgatives rarely; he imagined they hurt the tone of the stomach and intestines, and occasioned relaxation. Violent and long continued purging has, without doubt, been very improperly prescribed in many Chronic cases. In Dropsical swellings, he prescribed vomits, squills boiled in wine, as a diuretic, warm dry Baths or Stoves, as a sudorific, and in diet, warm Aromatics and Diuretic vegetables; he also ordered Exercise, Sea-voyages, and lastly, the Abdomen to be tapped. In drawing away water by a puncture into the abdomen, he recommended a tight bandage to be rolled round the belly to prevent sudden fainting. In the ascites, the sick person was barely allowed to wash his mouth with water to allay thirst. In the Tympanites, or windy Dropsy, as it has been termed, the diseased person was sometimes placed in sand, heated either by the fire, or the sun's rays, and a sweat forced: another way he mentions to force sweats, is by the heated vapour of sea-water. He mentions, as a diuretic in the Dropsy, an extremely

tremely acrimonious and dangerous gummy resin, Euphorbium. To reduce excessive corpulency, he recommended a constant succession of different exercises, weak meagre diet, little sleep, dry or sand baths, frequent frictions of the body with cloths, and to keep the mind agitated in active business.

In the Apoplexy he ordered Venesection, a Clyster, the head to be shaved, scarified and cupped, and afterwards some external applications to the head. He directed a particular and easy invention for exercising paralytic members, together with friction and acrid external applications to the skin to rouse motion, to visit the warm mineral springs of Italy, to swim in the sea, or in warm baths, with bladders under the arms, and the paralytic member to be sometimes placed under a Cataraet or fall of water.

In the Quinsy he bled, applied emollient Poultices externally, directed warm vapour into the throat, gargles for the mouth, and sometimes scarification and cupping glasses, or leeches to the external tumour of the fauces. The juice of horehound and honey mixed, was one of his prescriptions in the Pulmonary Consumption, and he ordered cupping glasses to the pained side. To burst a Vomica, or Abscess in the lungs, he prescribed Sternutatories, Vomits, and fumes of sulphur, or origanum, to be inspired, so as to excite a violent fit of coughing. If a paroxysm of Asthma threatened suffocation he bled, injected a Clyster, cupped and scarified the breast, and the back between the shoulders,

ders, applied warm vapour by means of sponges or flannels to the breast : after the termination of the paroxysm, he ordered a Vomit, and in the intervals vinegar of squills, an electuary of honey and resin of turpentine, honey, and vinegar, and a multitude of other ingredients, together with certain mineral waters, the breast to be subjected to a fall of water, sea voyages and travelling.

IN the Iliac Passion he bled, injected an emollient clyster, applied warm vapour, emollient Cataplasms, and a bladder filled with warm oil over the pained part, and also cupped and scarified it, and placed the patient in a warm bath. To destroy the small human worms, called *Ascarides*, he injected oil into the Anus, and to destroy the round worms he gave oil by the mouth, Bitters, and a profusion of other medicines. He mentions the most general occasional causes and symptoms of the Gout, and observes, that it is more frequent amongst the male than the female sex, and more so at the middle age, and that it is often hereditary; that the antecedent causes are often habitual drunkenness, or neglecting their accustomed exercise: the seat of the Gout he said is originally in the nerves, and that it is extremely difficult of cure when of long continuance. In the paroxysm of Gout, if the belly was costive, he gave a clyster, cupped and scarified, or applied leeches to the inflamed foot, or scarified it only, fomented it with warm vapour, and applied light emollient poultices; sometimes he directed mustard sinapisms to the seat of pain; but he was averse to unction and to
internal

internal medicines. On recovery, any injury of the foot, cold, indigestion, excess of wine and venery were to be carefully avoided ; when able, they were to walk about and to use exercise, and to drink the warm mineral waters.

“ METASYNCHRISIS” is a technical term in the Methodic practice, by which they pretended to direct remedies that would draw from the center to the circumference, change the pores, reduce them to symmetry, and of course, as they conjectured, the body to health. They also administered the “ circular routine,” pompously so denominated. It was plainly no more than this ; if one method of cure failed, another was tried ; and should the disease prove obstinate, a succession of experiments, fatiguing processes, and change of remedies, were persevered in through three or four different courses : an example of the practice may be seen in Cœlius, in the case of a Chronic Head-ach. Sick persons must have been blessed with a large stock of patience and phlegm to submit to the whole circular routine : it was sufficient to ruffle the temper of Job. A wit observed, that a man who could undergo the successive series of Methodic discipline, and yet recover, would in all probability make a hardy foldier.

A WRITER from Cappadocia, Aretæus, is in the hands of every Medical man, and ranks high in the list of select practical authors. Hoffman, a competent judge of Medical merit, calls his works golden monuments of Physick. His
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arrangement of diseases, both acute and chronic, but particularly of the former, is judicious. He reduced Hippocrates and other Greek writers, his predecessors, into better order; and from them transfused whatever he thought useful. In the accurate discrimination of diseases from each other, no better guide can be followed amongst the ancients: his Medicines also are in general powerful, and well chosen out of those then known and discovered. In the cure of some Chronic diseases very little improvement, at this distance of time, has been made to Aretæus. He describes the pestilential or putrid Sore Throat, which he observed was fatal principally to children. He mentions a species of religious madness, where the wretched Fanaticks tore their flesh and made incisions into it, believing that they should, by those odious barbarities, render themselves more acceptable to the Deity. In the Leprosy, he prescribed Hellebore as a purge, and vipers in food, together with acrid detergent baths of sharp pointed dock and sulphur, boiled in water. White Hellebore was a favourite emetic and remedy with him in several Chronic diseases, and Hierá Picra, a favourite purgative. In one species of Epilepsy he proposed to rub the head with Cantharides: he cured another by trepanning the skull. Archigenes, his predecessor, is the first who employed Cantharides in Cataplasms to raise vesications: but their application for many ages after was extremely confined. He trusted much to
various

various exercises and baths, in the cure of several diseases, and like all the Methodics to a multitude of external Applications, Fomentations, Unctions, Frictions, Cataplasms, and to the Dietetic regimen.

ARETÆUS is classed as one of the Pneumatic or Spiritual sect, who established a fifth element; but which in fact seems only to have meant the air we breathe in respiration. His system and ideas of the proximate causes of diseases roll upon the sensible qualities of the four ancient elements. Boerhaave esteemed Aretæus equal to Hippocrates, and adds, "*Hujus autem viri auctoritatem Hippocrati equalem habemus, in hoc etiam emicuit supra Hippocratem quod ad suas Classes et capita sparsa Hippocratis redigerit.*" Haller considers him as greatly superior to Hippocrates; but observes, that he had the advantage to live long after the Father of Medicine, and to profit by his discoveries. The commendation of two such excellent critics renders any farther encomium on this respectable Ancient superfluous. Authors are at a loss to fix the precise time when Aretæus wrote, whether shortly before or after Galen.

ABOUT the commencement of the Christian era, during the reigns of Augustus and Tiberius, Celsus lived at Rome. Disputes not yet adjusted have arisen, whether he followed Medicine as a profession, or only attended to it as an entertaining object of Science. His system of Medicine and Surgery, it is agreed, rivals the first in antiquity.

quity. Quintilian says, that his various genius led him also to write on Poetry, Rhetoric, Tactics, and Agriculture. Fortunately for Physick and Surgery, his Medical works have descended to us intire. In eight short chapters or sections, making in the whole but one small volume, he has with elegance and conciseness described every disease then known, and may be said to have compressed together almost the whole essence of ancient Medicine and Surgery. His observations are selected with judgment, and are calculated for use and business: in order and arrangement he excels Hippocrates, from whom the greatest part of his prognosticks are compiled: his language is easy and familiar, and the practical rules unadulterated with conjectures.

CELSUS treats of the origin and progress of Medicine. He examines, as Hippocrates had done before him, the salutary and morbid effects of the seasons, of heat, cold, winds, rains, and the diseases most predominant in the different stages of life. He enumerates a great variety of animal and vegetable food, and of drink used by mankind, distinguishing the diet into three classes, the strong, middle, and weak, together with their various effects and operations in the human body in health and in disease.

He divided Fevers into separate genera; into Quotidian, Tertian, Quartan, Semitertian, Continual, Pestilential, Ardent and Slow Fevers, and those accompanied with topical inflammations, the
Pleurisy,

Pleurisy, Peripneumony, &c.: after those general Fevers, he treats of diseases affecting the Head; the Trunk, the extremities and external parts, and of Surgical diseases.

THE outlines of Celsus' practice in Fevers were evidently copied upon those of Asclepiades, but were not at first so severe. From the commencement, until after three days, abstinence from food was prescribed; but indulgencies were made for the difference of ages, climates, seasons of the year, strength, habit, and nature of the Fever. No general rule he said could be laid down: In Africa, food must be given earlier; it must be given earlier to children, and in warm weather, than in cold; and the Physician is to watch that the sick are not lost through severe abstinence. Drink at the beginning is to be given sparingly, and the sick are to be told, that on the Fever abating, so will the thirst, which may be considerably assuaged by merely washing their mouth often. He condemns the Hippocratic doctrine of critical days, but was extremely attentive to the accession or periodical returns of febrile paroxysms, and to give food in the intervals only, or remission from Fever. If the Fever was nearly of a continued nature, he sought for the time of most ease and remission, to administer light food. Towards the termination of a febrile paroxysm, when a sweat was coming on, he directed warm drink to be given, and to cover the sick with warm bed-cloaths, so as to promote universal sweats, afterwards to wipe them dry.

Costiveness was to be removed, and the urinary discharge promoted. In some cases a warm bath was prescribed. The air in the sick chamber was to be kept fresh and cool. The sick were to be kept as easy as possible and free from cares, and every thing avoided that might exasperate, depress, or ruffle their passions.

IN slow and languid Fevers, he ordered the patient's body to be rubbed with oil and salt, or with cold water and oil, to excite a cold and hot fit, and if the cold continued too long, to give two or three glasses of wine, diluted with water. The same prescription was ordered in ardent Fevers; and sometimes, in the latter Fever, about four days after the commencement, large draughts of cold water were given, immediately after a vomit was swallowed, the sick were then covered up in a warm bed to promote plentiful sweats, and often fell into a profound sleep, from which they awaked greatly relieved. In Fevers attended with a cough, or with topical inflammations, he forbade cold water to be drank. Throughout Fevers of every denomination he attended, whether the Brain, or any of the principal Viscera were disordered or inflamed: in the former case, the forehead and temples were bathed and kept wetted with an infusion of roses and vinegar, and grateful and refreshing smells were applied to the olfactory organs. If the tongue was foul, it was softened with warm water, and afterwards anointed with Honey of Roses, and with other detergents. Wine and light broth was
allowed

allowed to those whose strength was impaired by the length and violence of the Fever, and by the frequent returns of febrile paroxysms. Wine in all cases was the common and palatable cordial of Celsus. Hippocrates had excepted infancy and old-age from Venesection. Celsus thought it might be drawn at any age when the strength permitted, and the disease required such an evacuation. In several species of Fevers, he prescribed Venesection, but at the same time complains, that it was then too frequently employed. Celsus paid no regard to the pulse, he looked upon it as an uncertain criterion, because age, sex, temperament, passions of mind, disorders of the stomach, pain, and the appearance of the Physician, disturb its pulsations and affect both its frequency and strength. He regarded with particular attention the eyes, countenance, and breathing, and the state of the skin, whether cold, hot, dry, and parched, or whether covered with general, or with partial sweats.

In the cure of Quartan Fevers, he directed severe abstinence during the first thirteen days, to take a vomit at the beginning, and always, when the fit was expected, to prevent it by going into the warm bath, after which a little light nourishment and wine was allowed. By such abstemious regimen, and by baths, the Fever was often subdued; but should it still prove obstinate, the baths, he says, must be omitted, and we must trust to exercise, friction, and increase the quantity of nourishment and of

wine ; costiveness also must be prevented. Garlick eat, or pepper ground, and mixed with water, or mustard with wine, and a glass or two drank immediately before the cold fit was expected, he recommended as sometimes effectual in preventing the paroxysm. The horror preceding febrile paroxysms, he said often arose from bile in the stomach, in which case a little warm water was useful to promote vomiting. In the Peripneumony he bled, cupped the sides, gave for drink a decoction of hyssop and figs in water, or an infusion of hyssop sweetened with honey, and in the height of the disease, was cautious not to admit too cool air into the chamber. In the Pleurisy he bled, applied mustard and vinegar to the pained side, to excite blisters, and to draw away the humours, or cupped, scarified and fomented the pained part. In the Quinsy, or Angina, he bled, gave a clyster, cupped the fauces externally, rubbed warm oil on the seat of pain, or applied warm salt in a bag to the throat, he also gargled, fomented, and if the disease was violent, he bled under the tongue, and scarified the Uvula and Tonsils.

He describes three different genera of Tabes, the Atrophy, Cachexia, and Phthisis Pulmonalis. In the Pulmonary Consumption, the patients were directed to avoid the baths, cold, catarrhs, intemperance and venery : they were to use a vegetable and milk diet, and alternately a little light fish, and suet puddings. As a Medicine, he recommended the expressed juice of plantain, or of horehound

hound boiled with honey, a spoonful of which was to be sipped daily; and he sometimes gave a soft paste or linctus of butter, honey, and the resin of turpentine boiled together, with several remedies, to mitigate the cough. If, however, the Fever and Cough increased, and the body became more emaciated, he made Ulcers in the sides and between the shoulders, with a hot iron, and these were not to be suffered to heal up until the cough was removed: the Patients were daily to use friction and exercise either by walking, by carriages, or by sailing: as the last resource, he advised a change of climate, and a Sea-voyage to Alexandria. In the Asthma he bled, fomented the breast and sides, sometimes scarified, gave the size of a bean of honey, galbanum, and resin of turpentine boiled together, which was kept in the mouth to dissolve slowly: he also recommended garlick, water-creffes, and such other diet as promoted urine, to drink a ptisan of hyssop with honey, to use exercise and frictions, and to keep the Belly temperate.

THE Epilepsy he said was more frequent amongst the male than the female sex; that it was seldom, except when recent, dangerous to life; that at the period of puberty it was often removed, after having resisted every means of cure. In this disease, he ordered the head to be shaved, and to be bathed or rubbed with oil and vinegar, or with vinegar and nitre, to draw blood on the day on which the fit was expected, sometimes to purge with black hellebore, and to vomit with white hellebore, to

use much exercise by walking, and afterwards violent friction in a warm chamber, and next in succession cold water to be poured on the head: should the disease still continue rebellious, to scarify, and to cupp the occiput, and to make two issues or running ulcers in the nape of the neck: heat, cold, wine, venery, passions of mind, anxiety, lassitude, fear and terroure, to be avoided. In obstinate chronic Head-achs, he ordered the head to be shaved, and to be bathed with warm water, or with salt water, or a decoction of Laurel; to excite sneezing; to gargle the mouth with such substances as promoted a flow of Saliva; to use daily frictions of the lower extremities; to cupp the temples, and back part of the head, to apply to the pained part sinapisms of mustard, and in the last extremity, to burn with a hot iron; to be abstemious in diet: heat, warm applications and coverings to the head, agree best with some, refrigerants with others, and experience alone must determine the choice. Persons seized with symptoms of Lethargy, were ordered to have cold water thrown upon the head, the head to be shaved and bathed with a decoction of rue, or of laurel; several other applications were directed to the head, and strong stimulants or fetid substances to be applied to the olfactory organs, and sneezing to be excited. He mentions the utility of warm Baths, and of the "Baiaë," those warm Baths of Italy, where a sulphureous vapour arose spontaneously from

from the earth: this remedy he prescribed in some Nervous disorders to excite sweat, discharge the old humours, and to change the whole habit of the body by a new supply. In one species of Leprosy, he prescribed, as part of the cure, sweating in warm stoves.

He distinguished the different genera of Dropsies, and in the Abdominal Dropsy, or Ascites, recommends to measure the body daily, together with the drink and urinary excretions, in order to judge how far the disease yielded to Medicine. In all cases of Dropsy, he recommended constant exercise by walking, the extremities to be daily rubbed, no more drink or fluids to be taken, than what is barely sufficient to sustain life, and of that quality which promotes urine; food to be of the solid kind, and especially of flesh, and a little rough wine to be drank; sweats to be forced in dry stoves, or in warm sand, or what is preferable, in the natural sudatoriums or vapour steams emitted from the earth, in some parts of Italy; the belly to be kept temperate, more by laxative diet than by Medicines: the final resource was to draw away the greater part of the water by a puncture into the Abdomen. A pipe of lead or brass, with a broad brim, to prevent its falling into the abdomen, was to be kept in the orifice until the remaining water was all gradually drawn off; and the former regimen to be continued for some time, until perfect recovery. In the Leucophlegmatia or Anasarca, he ordered the Skin to be rubbed twice

in the day, and one hour each time, with soft and warm hands, wetted with salt, nitre and oil; and to make incisions in the legs above the ankle, to give vent to the water.

He describes various Chronic diseases affecting the stomach, and the remedies adapted to each. If Phlegm abounded in the Stomach, he ordered vomits, exercise, friction, sailing, nothing cold to be eat nor drank, nor food liable to generate phlegm. If Bile abounded in the Stomach, he prescribed vomits, purges, exercise, sailing, infusions of wormwood, rough wine, and food easily digested. In that worst disease of the Stomach, relaxation, when it would not retain nor digest any food, he prescribed exercise, especially of the arms and superior parts, which he said was useful in most complaints of the Stomach, to read aloud, so as to agitate the Lungs and Stomach, to use friction, and the cold bath, general or only partial to the region of the Stomach, with cold food and drink, and rough wine: food corrupted in the Stomach is to be rejected by vomiting, and fresh food taken. In the Cholera morbus, a precipitate disease, he gave warm water to be drank to promote the vomiting, and when the crudity in the discharge of the Stomach was cleared away, he immediately gave wine and water to recruit the exhausted strength, and if it was quickly rejected by the mouth or anus, more was given. If the disease still proved refractory, with fainting and contraction of the extremities, he applied cupping glasses

glasses and mustard to the Stomach, and to the extremities warm fomentations, and anointed them with warm oil. He describes various diseases of the Liver and Spleen, and of the intestines. In the Jaundice, after regulating the diet, he prescribed a purge. Asclepiades gave for this purpose, salt water. Celsus likewise recommended, in the Jaundice, exercise, frictions, and, if in the winter season, swimming in a warm bath, if in the summer, in a cold bath, to drink some wine, and to indulge in all amusements. The Hæmorrhoids or Piles, he said, were sometimes followed with dangerous consequences, when suppressed. If the Anus was inflamed, the patient received ease by sitting in warm water, and by some other external applications. Where Piles of long continuance were suppressed, he advised to use afterwards much exercise, and at certain intervals to draw blood from the arm. In the Dysentery, he is rather sudden in prescribing astringents: to ease the pain and irritation of the intestines, he injected, by the anus, melted suet, or oil, or a decoction of Linseed, or the whites of eggs, with roses and butter, and after every defecation, bathed the anus with warm water. One remedy he praises in a chronic Diarrhœa, to strengthen the weak Intestines, is riding on horseback.

In cases of furious Madness, medicines, he said, were prescribed in vain during the paroxysm of rage: the Maniac was to be bound, and if the strength was great, blood was drawn; the head was shaved,
cupped,

cupped, and fomented with different ingredients; a purge was given; sleep, which is highly useful in all cases of Madness, was solicited by frictions, by the Poppy, by suspended beds, and by a fall of water. Sternutatories were sometimes ordered: the Passions were carefully watched, and those who were audacious or refractory to counsel were chastised by stripes, and punished by hunger: those who prefer darkness should be kept dark, and, vice versa: the diet to be of the weak sort, and scanty. In the Melancholy madness, he drew blood at the beginning, purged and vomited with the black and white hellebore, and if they refused to swallow it, it was mixed with their bread; he shaved and cupped the head; sometimes cold water was poured on the head, and the body bathed in water and oil: he solicited sleep by all the means before described: he endeavoured to soothe and comfort the mind by hope, and by such amusements or employments as entertained them in health, and either by gentle flattery, or by compulsion, to divert their thoughts to other objects. Sudden terror and surprize are sometimes beneficial. In every case, exercise is necessary and useful. In the furious madness, especially, the diet should be meagre. On the recovery of reason, they should visit another climate, and annually travel. In cases of bites from mad animals, Celsus, and almost all the ancients, are unanimous in burning over the wound with a hot iron, so as to keep an open ulcer and discharge for a considerable time after the injury; and

and in the last desperate stage of this disease, when Hydrophobia threatned, he advised, on some occasions, sudden immersion in cold water, or in the Sea.

IN the Sciatica, after frequent and ineffectual frictions over the seat of pain, of acrid applications and of cupping-glasses, his last resource was the hot iron.

IN his Surgery, all the improvements from Hippocrates to his own days are collected, the most minute and trifling diseases are not omitted. An eminent Surgeon, of the Moderns, emphatically exhorts every person in that profession, "to keep Celsus in his hands by day and by night." He describes the signs of a fractured skull, the method of examining for the fracture, of laying the Skull bare, by an incision in the form of the letter X, and afterwards of cutting away the angles, and of applying the Trepan, with the signs of danger and of recovery. He observed that sometimes, though very rarely, a fatal concussion of the brain might happen, the blood-vessels within the skull being burst, yet the bone remaining entire. After the operation of the trepan, sponges and cloths wet in vinegar, and several other applications were made to the head, and, throughout, severe abstinence was enjoined. In violent fractures of the ribs, he ordered venesection; low diet; to avoid passions of mind, loud speaking, motion, and every thing that might excite coughing or sneezing; cloths wet in wine, roses and oil, and

and other applications were laid over the fracture. The cure of fractures, in the upper and lower extremities, he said were nearly alike; that fractures differ in degree of violence and danger, in being simple or compound, that is, with or without a wound of the flesh, and in being near to the joint: he directs the extension of the member by assistants, the reduction, by the Surgeon's hands, of the fractured bones into their natural situation, and to bind the fractured part with bandages of different lengths, previously dipped in wine and oil; on the third day fresh bandages are to be applied, and the fractured member fomented with warm vapour, especially during the Inflammation. Splints, if necessary, are to be applied, to retain the bones in a fixed position. The fractured arm is to be suspended in a broad sling hung round the neck: the fractured leg is to be inclosed in a kind of case, reaching above the ham, and accommodated likewise with a support to the foot, and with straps at the side, to keep the leg steady: in the fractured thigh bone, the case is to extend from the top of the hip to the foot. He describes the method of treating compound fractures, and of removing small fragments or splinters of bones; and the manner of extracting darts. In luxations of the shoulder, he mentions several methods of giving force to the extension, and of replacing the dislocated bone. One method similar to Hippocrates was, to suspend the patient by the arm, the fore part of the shoulder, at the same time, resting upon the top
of

of a door, or any other such firm fulcrum. Another method was to lay the patient supine, some assistants retaining the body in a fixed position, and others extending the arm in the contrary direction, the Surgeon, in the mean time, attempting, by his hands, forcibly to reduce the bone into its former place.

If a large inflammation was expected to ensue after a wound, it was suffered to bleed for some time, and blood was drawn from the arm. To wounds, accompanied with considerable hæmorrhage, he applied a sponge, wet in vinegar, and constant pressure: if necessary, from the violence of the hæmorrhage, ligatures were made around the Vessels, and sometimes the bleeding orifice was seared up with the point of a hot iron. On the third day fresh dressings were applied. In considerable contusions, with a small wound of the flesh, if neither nerve nor blood-vessel prevented, the wound was to be enlarged. Abstinence and low diet, in all such accidents, was prescribed; cloths wet with vinegar, and several other applications, were directed to the inflamed part. He observes, that fresh wounds may be healed without compound applications: Hippocrates used a piece of dry sponge, and condemned greasy ingredients. In external gangrene, Celsus cut into the sound flesh, and when the disease, in spite of every effort, spread, he advised extirpation of the member. After cutting to the bone, the flesh was then separated from it, and drawn back, in order to save as much flesh as possible to cover the extremity of the bone.

bone. Celsus, though extremely diffuse in the description of Surgical diseases, and of various remedies and external applications, yet he is nearly silent on the method and process of extirpating members; from which, comparing his treatise with the modern systems, we might infer, that the operation was then seldomer practised than at present. He describes the symptoms of that dangerous inflammation, the Carbuncle, and directed immediately to burn or to corrode the gangrened part. To promote the suppuration of Abscesses, he ordered Poultices of barley-meal, or of marshmallows, or the seeds of linseed and fenugreek. He also mentions the compositions of several repellent cataplasms. In that superficial inflammation called the Erysipelas, he applied ceruss, mixed with the juice of Solanum, or night-shade. Sal ammoniac was sometimes mixed with his plasters.

He is very minute in describing diseases of the Eyes, Ears and Teeth, and in prescribing a multitude of remedies and applications. In Inflammation of the Eyes, he enjoined abstinence and low diet, rest, and a dark room: if the inflammation was violent, with great pain, he ordered venesection, and a purgative; a small poultice of fine flower, saffron, and the white of an egg, to be laid to the forehead to suppress the flow of puita, the soft inside of warm white bread, dipped in wine, to be laid to the eye; the poppy and roses were also added to his Collyriums, and various ingredients too tedious to enumerate. In chronic watery

watery defluxions of the eyes, he applied astringents, cupped the temples, and burnt the veins over the temples and forehead. He couched cataracts, by depressing the chrystalline Lens to the bottom of the orbit. Teeth, loosened by any accident, he directs, after the example of Hippocrates, to be fastened with a gold thread to those adjoining on each side. Previous to drawing a tooth, he ordered the gum to be cut round its neck: and if the tooth was hollow, it was to be filled with lead before extraction, to prevent its breaking by the forceps. He describes not only the inflammation, but likewise the elongation of the Uvula: he also describes the Polypus, and some other diseases affecting the Nose.

He describes several species of Herniæ, or Ruptures, and also the Hydrocele or dropsy of the Scrotum, and the manual assistance required in those complaints. After the return of the intestines into the abdomen, a firm compress was applied to that part of the groin through which they protruded, and was secured by a bandage round the loins. In some cases, after the return of intestinal ruptures, he diminished the quantity of loose skin, and formed a cicatrix, so as to contract over the part, to render it more rigid and capable of resisting. He describes various diseases of the genital parts, a difficulty of Urine, and the manner of drawing off the water by a Catheter; the signs of Stone in the bladder, and the method of sounding or feeling for that Stone. Lithotomy was at that time performed by introducing two fingers into the Anus, the Stone was then pressed forward

forward to the Perinæum, and a cut made into the Bladder, and by a crooked instrument made in a particular form, the Stone was extracted. He describes the manner of performing this operation on both the sexes, of treating the patient, and the signs of recovery and of danger. Hippocrates had even ventured to cut into the kidney, either to give a discharge to abscesses or to extract stones.

CELSUS directed various corrosive applications and injections to Fistulas, and in the last extremity opened them to the bottom with a knife, cutting upon a grooved instrument or conductor. In old callous Ulcers, he made a new wound by either cutting away the hard edges, or corroding them with verdigrease, quick-lime, alum, nitre, and with some vegetable Escharoticks. He mentions the symptoms of Caries in the bone, directs the bone to be laid bare, and to be pierced with several holes, or with the trepan, or to be burnt or rasped, in order to promote an exfoliation of the corrupted part; afterwards to apply nitre and several other ingredients. One of his applications to a Cancer was Auripigmentum or Arsenick. He directs the manner of Tapping the Abdomen in the Ascites, and of drawing blood by the lancet and cupping-glasses. His cupping-glasses seem not to have been so convenient as the modern: they were made either of brass or horn, and were unprovided with a pump. He cured Varicose veins by uision or by incision.

incision. He gives directions for extracting the dead foetus from the womb, in whatever position it should present, and, after delivery, applied to the private parts, soft cloths wet in an infusion of vinegar and roses. In Celsus' works, there is a great redundance and superfluity of plasters, ointments, escharoticks, collyriums, of suppurating and discutient cataplasms, and external applications of every kind, both simple and compound: perhaps, amongst the multitude, there are a few useful remedies now laid aside and neglected.

His Anatomy is principally confined to a short description of the internal viscera, and of the bones and articulations: the Osteology is by far the most perfect.

It is impossible to abridge this illustrious Author: his book is a perfect abridgement, refined in most places from all extraneous or useless matter. Those who want to be informed of his merit, must consult the original. His stile is neat, nervous, and concise, few technical terms pollute his page, and each disease is described by a small number of essential symptoms. This is a golden rule, which, we have great reason to lament, has been too little attended to by Medical Authors. As a Classical Latin Writer, Celsus holds the rank in Medicine, that Tacitus, Livy, or Cæsar are honoured with in historical composition. I shall close my feeble eulogy with a specimen of his

common stile, and at the same time, an excellent lecture upon the means of preserving health.

“ SANUS homo qui et bene valet, et suæ spon-
 “ tis est, nullis obligare se legibus debet, ac neque
 “ Medico, neque iatroalipta egere: hunc oportet
 “ varium habere vitæ genus, modo ruri esse, modo
 “ in urbe, sæpiusque in agro: navigare, venari,
 “ quiescere interdum, sed frequenter se exercere:
 “ siquidem ignavia corpus hebetat, labor firmat:
 “ illa maturam senectutem, hic longam adolescen-
 “ tiam reddit. Prodest etiam interdum balneo,
 “ interdum aquis frigidis uti: modo ungi, mo-
 “ do se ipsum negligere: nullum cibi genus fu-
 “ gere, quo populus utatur: interdum in con-
 “ victu esse, interdum ab eo se retrahere: modo
 “ plus justo, modo non amplius assumere: bis die
 “ potius quam semel cibum capere: et semper
 “ quam plurimum dummodo hunc concoquat.
 “ Sed ut hujus generis exercitationes cibique ne-
 “ cessarii sunt, sic Athleteci supervacui. Nam et
 “ intermissus propter aliquas civiles necessitates
 “ ordo exercitationis corpus affligit; et ea cor-
 “ pora quæ morè eorum repleta sunt, celerrime
 “ et senescunt et ægrotant. Concubitus vero
 “ neque nimis concupiscendus, neque nimis per-
 “ timiscendus est: rarus, corpus excitat, frequens,
 “ solvit. Cum autem frequens non numero sit,
 “ sed natura, ratione, ætatis et corporis, scire li-
 “ cet eum non inutilem esse, quem corporis neque
 “ languor, neque dolor sequitur.”

DIOSCORIDES, of Cilicia, wrote expressly on the *Materia Medica*, and enumerates all the simples and drugs then used in Medicine: he lived during the reign of Nero and Vespasian, and had travelled to many kingdoms to acquire a knowledge of plants. This Author divides the *Materia medica* into three classes, Plants, Animals and Minerals: he mentions the places where they may be found, the manner of preparing and preserving the medicinal simples, and the efficacy ascribed to them in the cure of diseases, and in his progress makes frequent allusions to his predecessors, many of whose works are now lost: his five books are come down to us entire. Theophrastus had described the few plants then known (between 5 and 600) chiefly as a Botanist; but even in Dioscorides the qualities and medical effects of simples are vague and incorrect. One plant he says is good to promote urine, without attending to the disease, and many other circumstances necessary to determine the propriety of its administration: we are often also embarrassed to know what plant is meant by Dioscorides's description, which is extremely superficial. This difficulty is increased by the names of many plants and minerals being afterwards changed, and by the same plant being called by different names. Some modern Authors, hereafter to be mentioned, have assisted to decypher those difficulties. Dioscorides must not be read in the original, but either with

Jn. Bauhine's Commentary, or that of Fabius Columna: Saumaise is also an able critic on this subject. Notwithstanding many defects and inaccuracies, Galen allows that Dioscorides wrote better upon the *Materia Medica* than any who preceded him.

WE have seen that some of the Metals, Cérus, Litharge, Verdigrise, burnt Antimony, and Cinnabar were then used in plasters and external applications only: Quicksilver was considered as a poison. A few earths and sal-ammoniac (different from the present salt of that name) and fossil salts were given internally. Bituminous, nitrous, and sulphureous mineral waters were prescribed in baths, and to be occasionally drank, as may be seen in Pliny and Galen.

MEDICINES were then, as at this time, prepared in various forms. In their "*Formulæ Medicamentorum*," we find powders, pills, troches, electuaries, the infusion of plants and fruits, their expressed juice, and decoctions, gargarisms, errhines, sinapisms, collyriums, suppositaries, pessaries, tents, unguents, cataplasms, plasters, cerates, &c. Royal compositions and antidotes were in great repute. They had antidotes and recipes not only against poisons and venomous bites, but to cure various diseases. Nero's Archiater invented that celebrated but absurd composition, called after him, *Theriaca Andromachi*: it was intended as an improvement upon the antidote of the unfortunate Asiatic prince, Mithridates, who was dethroned by Pompey. Mithridates's antidote consisted of 36 ingredients only aromatics, spices
and

and gums, and amongst the principal gums, Opium. Vipers were added by the Romans, together with 24 new ingredients. Several of the Roman Emperors had this supposed antidote against diseases and poisons prepared in their palaces; and, at present, the Theriac, lopped, it is true, of many superfluities, maintains a place in the Pharmocopæias and shops: it was administered by the Ancients in a variety of disorders. Pliny, with his usual caustic raillery, says, that such a confused jumble of drugs were heaped together, “ad ostentationem artis.” Vipers were then prescribed by many Physicians, in obstinate ulcers, foulness of the skin, and leprosy, in wasting of the flesh, and as antidotes against poisons: they were prepared either in broth, jellies, or vinous infusions, or roasted as we do eels. Assafoetida, that ill-scented gum, which the Germans call, *Stercus diaboli*, was in use with the ancients, and was an ingredient in several of their sauces and ragouts. Unguents and costly perfumes, those childish and disgusting inventions of luxury and depraved taste, the Romans carried to an extravagant height: they were composed of various odoriferous plants, flowers, gums, or resins infused in oil, of castor, amber, cinnamon, and other aromatics.

PLINY, the naturalist, a Genius distinguished by eminent talents and high rank, though no Physician by profession, wrote many Chapters on the Origin and History of Medicine, and on *Materia Medica*, and Pharmacy. He proposed to condense into one Treatise, the observations of Theophrastus

and Dioscorides. His natural history and epitome of Aristotle is universally known. Eager to attain knowledge and universal erudition, he collected from all the writers of antiquity, and published some miscellaneous reflections on Meteors, Astronomy, Comets, Eclipses and Earthquakes. To rear up so extensive an edifice, he was under the necessity of trusting many things to the information and testimony of others; and, amongst many important truths, are intermixed a number of errors and fabulous trifles. He declared himself against the dogmatic and conjectural Sects, and against Royal compositions and compound medicines: to heap together, says he, a number of simples in scruples, is a proof of remarkable impudence, and an invention of the shops for avaricious gain. Wine he termed the blood of the earth, the most grateful and exhilarating cordial in nature. The ancient Romans, during their splendor, cultivated the Vine with peculiar industry and care; and at one time they could reckon up eighty different sorts of wine, the produce of the grape.

GALEN, P. C. 160, the last Author of distinction who practised Medicine at Rome, is a man, upon whose character and writings I must dwell for some time. He reigned during a great number of centuries over Physic, as an inspired Prophet, or a Pope gives laws in Religion. Galen was universally appealed to, as a monarch and an oracle: he was supposed to have brought every part of Medicine to perfection, and his system credited as infallible.

infallible. Physicians did little more than copy, or write dull commentaries upon some parts of his voluminous works, many of which are now lost; but at present Galen's writings amount to six volumes in folio. This Author was born at Pergamus, in the Lesser Asia, and had travelled to many kingdoms for instruction, amongst the rest, to the renowned school of Alexandria in Egypt, where he resided several years, in the prosecution of Medical studies. About one hundred and sixty years after Christ, and at the age of thirty-two, he arrived at Rome, where his fame and knowledge procured him admirers and patrons amongst men of rank; and as he says, from that distinction, a number of envious rivals and enemies in his own profession. The Emperors Marcus Aurelius, and Lucius Verus, conferred particular favours upon him: he had the good fortune to cure the former Emperor of a dangerous disease, and by his own relation of that lucky circumstance, received some flattering compliments from the Roman Sovereign.

At the time of Galen's appearance in Rome, all the other sects, the Dogmatic, Empiric, Methodic, Episynthetic, Pneumatic, and Eclectic subsisted: these were again split into parties, and not entirely agreed what leader to follow. Galen's system gained the ascendant over all the others: he declared himself of no party in Medicine; on the contrary, he appears to have held all the rival sects in great contempt: the Methodics he called

the Asses of Theſſalus. The Empirics began by degrees to degenerate into mere quacks, adminiſtering medicines, however powerful, without reaſon or judgement; and with all the other ſects, gradually ſunk into contempt and oblivion.

GALEN boated publicly in his writings, of his ſuperior knowledge in Medicine, and in many inſtances aſſumed a magiſterial authority, and illiberal ſuperciliousneſs. “ I have, (ſays he, in a fulſome ſtrain of perſonal adulation,) done as much to Medicine, as Trajan did to the Roman Empire, in making bridges and roads throughout Italy. It is I alone that have pointed out the true method of treating diſeaſes: it muſt be confeſſed, that Hippocrates has already chalked out the ſame road, but as the firſt diſcoverer he has not gone ſo far as we could wiſh; his writings are defective in order, in the neceſſary diſtinctions; his knowledge in ſome ſubjects is not ſufficiently extenſive; he is often obſcure after the manner of the ancients, in order to be concise; he opened the road, another muſt render it paſſable.” All theſe defects in Hippocrates, Galen undertook to repair, and to ſupply new materials. The former is his model in many inſtances, and upon whoſe works he has written a variety of elaborate commentaries. Galen plumes himſelf upon being the firſt who eſta-bliſhed a juſt and rational method of treating and teaching Medical ſubjects. He compares a Phyſician to an Architect, who ſhould know all the parts, even to the moſt minute, that compoſe a
house;

house: the Physician must likewise learn the actions and particular functions of each part, composing the human body: this is enforcing the study of Anatomy and Physiology.

HIS theory of the four elementary principles, was originally the offspring of the Greek Philosophy, and is in reality the echo of Hippocrates. Fire, air, earth and water, were supposed the elementary bodies of all nature, and the four elementary humours of the human body: analogous to these were blood, pituita, yellow, and black bile. The qualities of these elements were said to be heat, cold, moisture, and dryness, and diseases to ensue, upon either any excess or any depravity of the fundamental humours. He drew the outlines of the four supposed great classes, or elementary temperaments of the human race, the sanguine, the phlegmatic, the atrabilarian, and the melancholic: these were again subdivided by him into many more of a mixed kind, and to these he added temperaments peculiar to certain individuals.

HE divided the component parts of the body into solids, fluids, and spirits; the humours into blood, pituita, yellow and black bile: the functions of the body into natural, vital, and animal. The natural were subservient to digestion, nutrition and generation: the vital to the heart and respiration, and conveyed life and heat: the animal, the most noble of all was lodged in the brain, on this the internal and external senses depended.

HE scrupulously examined the effects and abuse of what are perhaps improperly termed the Non-naturals, and which, when well regulated, tend materially to preserve health: such are the air we breathe, food and drink, motion and rest, sleep and watching, retentions and excretions of the body, and passions of mind. These are also by Galen called, *procatartic* causes, because they put into motion the antecedent, which may be either *plethora*, or depravity of the elementary humours. Hippocrates alledged that air in the blood-vessels was the cause of some Nervous and Spasmodic diseases.

A DISEASE, according to Galen's definition, implied an inability to perform the functions of the body, as in health. His classification of diseases is analogous to that of Hippocrates; he parcelled them into epidemic, endemic, sporadic, short, long, benign, malign, and many other divisions unnecessary to be recapitulated. The symptoms of diseases, he termed "*affectiones contra naturam*," which depended upon the disease, and accompanied it as a shadow does the body: they were of three different species, the action of certain parts injured; the qualities of parts changed; faults in the excretions and retentions. Thus, bad digestion is a symptom of the natural action of the stomach and intestines being impaired; fainting, of the heart and vital; apoplexy of the brain, or animal functions.

Faults

Faults in the retentions and excretions, are indicated in the stools, urine and other outlets.

AGAIN, he separated the symptoms of diseases into two heads; the diagnostic and prognostic. The diagnostic were afterwards split into pathognomonic and adjoint. The pathognomonic signs serve to distinguish one disease from another, they begin, accompany, and terminate with the disease: the adjoint on the contrary, are common to several diseases. For example, in the pleurisy, a cough, difficulty of breathing, pain of the side, and constant fever, are pathognomonic symptoms; but the spitting of divers colours, an adventitious sign. The diagnostic signs of diseases were taken from the action of parts injured, from the causes known to excite such diseases, from the pulse, and from the various excretions. External diseases and accidents he left to be discovered principally by the sight and touch.

A KNOWLEDGE of the different functions of the body, says Galen, serves to discover the diseased organ: thus a difficulty of digestion is an indication that the stomach is affected: a difficulty of passing urine shews that the bladder, kidneys or other parts contributing to this function are obstructed: an alteration of the pulse, shews that the heart and arteries are affected: immobility of any part, the nerves. Functions may also be injured, not immediately or directly, but by consent and sympathy: vomiting may originate from a stone in the kidneys, and in that case Medicines directed to the stomach alone would be nugatory. The
de-

degrees of pain also indicate the parts which suffer: in pungent acute pain, a membranous part is attacked; in pain with convulsions, a nerve.

DISEASES are also known by the excretions and evacuations. Little pieces of flesh emitted with the urine, descend from the kidneys, but if in small scales, like bran, from the bladder: blood issuing from a vessel or outlet, in an unequal current, and violent starts bursts from an artery: blood coughed up shews, that a vessel of the lungs is ruptured; and when mixed with matter or pus, indicates an ulceration in the same organs: the colour of the skin changed to a deep yellow, as in jaundice, is a sign that the bile is obstructed. Galen has written several chapters or books, expressly to determine the seat of different diseases, which may be rank'd amongst the most select parts of his works:

FROM the causes of diseases, continues this Author, we are furnished with matter to determine the individual nature of each. From Plethora and Caco-chymia of the humours he derived many diseases. There might, according to his system, be a plethora of all the four humours; but if the two Biles or Pituita notably exceeded their just proportion, it was called Caco-chymia, because the blood was by that means corrupted: these humours might also be in a state of caco-chymia merely from degeneracy of their primary qualities.

THE predominant features of the four primary elements were thus distinguished. Sanguine plethora

thora (moist and warm) is indicated by a plumpness of the flesh, an unusual enlargement of the body, the vessels are turgid, pulse strong, respiration not entirely free, with drowsiness and disturbed dreams, sometimes eruptions of blood burst from the nose or other outlets. Plethora is further known by the causes which tend to produce it; such are a sedentary life, nourishing food, interrupted exercise, or some habitual evacuations stopped.

BILIOUS cacochymy (warm and dry) is known by a jaundiced colour of the skin, eyes, or tongue, bitterness of the mouth, thirst, disgust, nausea, and discharge of bile by the anus, or by vomiting, hunger is supported with difficulty, the pulse is quick, the temper lively and choleric. A warm dry temperament, summer, youth, hot climates, labour, exercise, watching, abstinence, passion, and disgust all dispose to it.

MELANCHOLIC cacochymy (cold and dry) or black bile is manifested by depraved or unnatural cravings, flatulency, sadness, fear and taciturnity, by hemorrhoids, black-jaundice, varix, leprosy and cancer. Autumn, middle age, cold and dry temperaments, gross nourishment, grief, and chagrin, all pre-dispose to the melancholic temperament.

PITUITOUS cacochymy (cold and moist) appears by paleness, dead-coloured fatness, and coldness of the skin to the touch; the pulse weak, slow and soft; the urine white or pale; with defluxions, catarrhs and edematous tumours: such temperaments are easily affected by cold, they are engendered

dered in cold moist climates, and increased by crude watery food, sloth, sedentary life, and excess of sleep.

He discusses the prognostic signs, which indicate the future crisis, and final issue of diseases: These equally with the diagnostic are principally collected from the natural, vital and animal functions, from the excretions, from the qualities of parts changed, and from the critical days. When the disease is known, it leads us to apprehend the event. Thus, a malignant Fever is always dangerous; intermittents commonly terminate favourably; a great inflammation is more dangerous than a small one; the danger is also increased by the importance of the diseased organ in sustaining life. The cause of the disease, the age, sex, climate, seasons of the year, and degrees of injury in the functions and excretions, all assist to direct the prognostic. There are in this author an infinite number of important prognostic observations, and commentaries on those of Hippocrates.

GALEN is the first medical author, after Erasistratus and Archigenes, who attended minutely to the pulse in diseases: Hippocrates and Celsus, for reasons already given, trusted more to the manner of respiration. Galen wrote seventeen chapters upon the different pulses, and the indications which they furnished in diseases: a few of those distinctions will serve as a specimen of his ingenuity. There are the simple, compound, long, large, elevated, quick, frequent, vehement or strong,

strong, flow, weak, soft, hard, equal, unequal, intermittent, dicrotus or double stroke, undulating, trembling, convulsive pulses, &c. He attempted to account for the causes of these different pulses, dividing them into primary and secondary. A strong pulse indicates strength of the heart and arteries; a soft pulse, relaxation of the arteries; a hard pulse, tension and stricture: he added, that age, sex, temperament, and change in the non-naturals, make alterations in the pulsations. Many of the minute distinctions respecting the pulse, existed in Galen's brain only; at least many of the causes, and of the prognostics built upon them are extremely suspicious. Galen even confesses the impossibility of distinguishing all these different pulses, by saying, it would require the life of one man to learn them perfectly. We know that the pulse is altered by the slightest causes in diet, drink, or passions of the mind, and even at different times of the day is quicker and slower. Galen is equally subtle on the various appearances and changes in the urine, and the indications and presages to be drawn from this evacuation in diseases.

IN every disease he said there were "*très affections contra naturam*;" the disease, the cause, and the symptom. The principal disease, which is the cause of all the other symptoms, should be the constant object of the Physician's attention, and of his remedies; except when a symptom is very violent and threatens danger, then we must desert the original disease for a time, and endeavour

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your to remove this alarming symptom. In the prevention of diseases, the causes are principally to be avoided or removed. In the cure and prognostics of diseases, many circumstances are to be weighed together, and from a general view proportionate remedies administered: we are also to regard the strength, age, temperament, habit, the nature of the organ affected, whether tender or delicate, as the eyes; or of immediate moment to life, as the brain and lungs.

FROM the days of Hippocrates to those of Galen, the list of remedies, more especially of compound prescriptions, was enormously accumulated: in other respects, his practice is founded upon that of Hippocrates, whose doctrine of the critical days he defends. Galen wrote diffusively on the *Materia Medica* and composition of drugs. Many of his prescriptions, recipes, and antidotes, collected from various Authors, are made up of a rabble of discordant ingredients, and are now expunged from our modern Pharmacopœias. All the properties and virtues which he attributed to medicines, are derived from their supposed elementary qualities, heat, cold, moisture, and dryness. Each of these qualities was again subdivided into four degrees; and a plant or medicine was said to be cold or hot in the first, second, third, or fourth gradation. If the disease was hot or cold in any of those four stages, a medicine, possessed of a contrary quality, and in the same proportionate degree of elementary heat or cold, was prescribed. Saltiness, bitterness, and acridness of bodies depended

pended, in his ideas, upon heat, or dryness. He bled rather oftner than Hippocrates, but never children under fourteen years of age: the quantity drawn, was proportioned to the disease and strength, and never exceeded eighteen ounces, nor was less than eight. Errors, he said, had better be committed on the safe side. He bled to diminish Sanguine plethora, and purged to evacuate Cacochymia. Galen opened the jugular veins, and sometimes performed arteriotomy at the temples; and he directed leeches, scarification, and cupping-glasses to draw blood. To force sweats, he seldom employed internal medicines, the Theriac excepted, but had recourse to baths or frictions. Hippocrates makes no mention of internal sudorificks. Galen made frequent use of Anodynes, or of compositions in which opium was an ingredient, to ease pain, check inordinate evacuations, or procure sleep. His laboured reflections on the choice and regulations of diet, from infancy to old age, and in different seasons of the year, and in health and sickness, are copied by most succeeding writers, and are not inferior to any part of his works. He scrutinized almost every sort of aliment, and the effects of it in digestion and concoction, and in his rules for preserving health he also expatiates largely upon exercise, baths, frictions, evacuations, &c. Several of his Surgical works, and commentaries on the Surgery of Hippocrates are preserved: he described with accuracy the different species of Herniæ or Ruptures, and seems to have practised the Surgical art together with Medicine.

WHETHER Galen ever regularly dissected human bodies, is doubtful. At Rome, a delicacy and superstition was entertained by the people, in respect to violating the bodies of the dead, and they approached a corpse with horror: numbers were burnt after death. Physicians by accident, says Galen, may procure the body of a robber killed in the highway, of enemies slain in the field of battle, of malefactors condemned to the wild beasts, or of young infants exposed in the streets, a custom, historians report, not unfrequent amongst the indigent Romans, when taxes became insupportable: such wretched objects alone were permitted to be dissected. To popular abhorrence were added, severe penalties and punishments upon any one who should violate the corpse of the dead. This law was enacted in consequence of the domestic murders, and other horrid cruelties committed by the furious factions of Marius and Scylla. Galen advises, first to practise the dissection of apes or monkeys; and that if in the wars with the Germans, or by any other accident, physicians should find human subjects for dissection, they will be more expert and ready to distinguish the different parts in man. He often describes parts of the ape or monkey, supposing them to be analogous to those in man. He tells us that he had dissected many species of the brute creation, and amongst them, monkeys and apes; animals, we must allow, that in external make, and still much more in their internal structure, are rude imi-

imitations of man: on some occasions, perhaps, an anatomist or a moralist would be puzzled to find out the superiority. Even at Alexandria, that famous city, which yielded, with reluctance, the precedence to her sovereign Rome, and the medical school to which Galen recommended students to travel for instruction, they had only at this time dried skeletons to inspect: the rest of the anatomical course was probably finished upon the animals just mentioned.

GALEN's anatomical works are very voluminous: they contain many discoveries of his own, and of his predecessor Marinus, and display, beyond all comparison, the most perfect and masterly anatomical portrait of the human body, and physiology of its different functions to be met with in antiquity. In them we may trace a description, by no means contemptible, of the bones, ligaments, cartilages, muscles, and skin; of the blood-vessels; of the brain and nerves, and their membranes; of the eye, its coats and humours; and of all the external organs of sense; and the nerves with which they are supplied, and of the vertebral nerves; of the trachea arteria, lungs, heart and diaphragm; of the œsophagus, stomach, and intestines; of the liver, gall bladder, spleen, and pancreas; of the kidneys, ureters, and bladder, and of the organs of generation in both sexes: he is the first who dissected a considerable number of the muscles, and who demonstrated their figure, situation and direction, but was ignorant of their fabric. Galen knew of that obvious motion perceptible

in the heart, its systole and diastole, and that the arteries and veins contained red blood, and he seems not to have been ignorant of the lesser circulation through the lungs, and of the communication between the auricles, and the ventricles of the heart, in a fetus before birth; but the general rotatory circulation through the body, continued many centuries after a profound secret. Galen imagined, that from the lungs the heart was supplied with the subtile and pure part of the air, which contributed to cool the blood, that the blood and air contributed conjointly to form the animal and vital spirits, and that the superfluous or gross part of the air, after serving the important function of the voice, was, together with gross fumes from the blood, discharged by the breath, and a part by the pores of the skin. He imagined that the chyle was absorbed into the liver, and there concocted into blood; that the bile was an excrementious fluid from the blood, but which served at the same time to stimulate the intestines to expel the fæces; and that the black bile, or gross dregs of the blood, was separated from the spleen. To the nerves, he assigned their proper use of serving as primary instruments of sense, and of motion. Numbers of the present anatomical terms are copied from Galen.

I HAVE found it no easy task to contract into miniature, the immense mass of Galen's writings, system and improvements in medicine. To have done it with sufficient justice to the author would require, instead of one small chapter, or rather a few pages only, several large volumes.

volumes. We observe that Galen has attempted to describe the structure of the human body, and to explain its functions; to investigate the causes of diseases, their manner of operation; the names, composition and virtues of drugs; and lastly, the science of diagnostics and prognostics, and of remedies. Under these different branches are included anatomy, physiology, pathology, materia medica, and the practice of physick. No part of medicine, as it is now at least taught in the schools, was left untouched by him, medical chymistry and Natural philosophy excepted, which for ages after continued to be unknown. His anatomy and physiology, though deformed by many errors, prevented a great deal of labour to the moderns, and put them forward in this science. He re-established the study of Hippocrates, and pointed out the clew, to arrive at medical knowledge, not, I confess, always by example and experiment, but to study it with more advantage than formerly, to place the science upon a rational foundation, and to extend its limits. Galen, it is true, often lost his way, and was bewildered in subtleties; but even his errors stirred up a curiosity for investigation, when learning and philosophy were revived in Europe. As a proof of those sentiments, which to some may appear ill-founded, medicine is now taught at most universities upon the outlines and vast range of the Galenic plan. Galen must be allowed to have furnished the most compleat original drawing, though deformed and incorrect in all its parts. His com-

ments upon the Authors and Medical practice of antiquity, make us feel less regret for the destruction of the originals. Unfortunately for Galen, materials were not in his days, collected to build any permanent system : but when deficient in facts and experiment, he possessed a warm Asiatic imagination, and abundant invention to fill up the chasm with conjectures. He did not trouble himself to philosophize in that close wary tract, pursued by our modern Locke, from established facts ; many of his fine spun theories, rest like the fairy castles upon a baseless fabric of air. Had he lived in modern times, it is probable, that with the talents of a rhetorician, of an easy florid writer, and a man of general erudition, all which he is allowed to have possessed, his system would have rivalled either of the two modern compilers Boerhaave or Hoffman. Like Aristotle, he seems to have been better fitted to digest the observations of others into systems, than to build upon his own collection : but experiments and medical discoveries are made by slow degrees, and Galen had too much vanity, even in the most intricate questions, to appear ignorant. His theory of the four elements, as applied to the human body, and to the virtues of medicines, is a curious web of philosophical fiction, a monster of the fancy, and to support it, he heaps up mountains of casuistry and conjecture. His writings are too verbose and prolix, and his practical observations are obscured by clouds of sophistry.

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In resemblance of his favourite Aristotle, there is a superfluous round of definitions and divisions, and human patience is often exhausted in the jargon of terms, refinement and logick.

During onethousandthreehundred years, Galen's system gave universal laws in medicine, alternately to Europe, to Africa, to part of Asia, and to the Arabian physicians, and wherever the science was cultivated. The ridiculous opinion then, and long after, conceived, that medicine had reached to full maturity, produced the same baneful effects of bigotry and superstition; it checked the advancement of reason, the prosecution of natural truths, and new discoveries. Galen's long dictatorship, however, is to be attributed principally to those general causes, which we shall soon see involved Europe in ignorance, and buried all the sciences equally with medicine, in the ashes of Rome.

MR. Le Clerc has enumerated a long roll of physicians, principally before, and a few after Galen, who practised, and wrote books at Rome. The names and individual history of each are, in my opinion, of very little importance: even the names of Crater and Alexion, men of the first practice in their time, would soon have been forgotten, had they not been mentioned by Cicero and Horace; and they might, without any loss, be suffered to sink with innumerable other proper names, and human memoirs in the gulph of oblivion. Such trivial anecdotes tend only to embarrass history.

WE are for some time to take our leave of mighty Rome, to return back into Greece, which had long continued an humble appendage of Roman sovereignty. The proud mistress of the world, at the end of the second century, began to show signs of internal decline, her constitution was unsound, and in a few centuries after, entirely worn out. The ambition of Triumvirs, Tribunes, and Generals, had first gradually levelled all the fences of Roman liberty; and anarchy at length terminated in the absolute authority of the subtle Augustus. In the three last centuries a few additions and improvements were made by some distinguished Greeks, in medicine and surgery: with these exceptions, literature and the arts hastened to decay, throughout the wide dominions of Rome. Civil dissensions, and the despotism of her profligate Emperors, accelerated their downfall. Plato, Aristotle and Galen, were now the leaders in science and medicine: Alexandria was the fashionable school for study, where men were taught to consume their time and health, in the most profound metaphysical meditations and verbal disputes.

ALCHYMY, a deceitful art, introduced by the Egyptians, had early become an object of study, and of insatiable avarice. In the second century, a public edict of the Emperor Dioclesian, commanded, under severe penalties, all the books on this science, to be burnt. In the fourth century some traces of Alchymy began to revive, and many fruitless experiments were made, to change
metals

metals into gold. Several Greek writers are recorded by Boerhaave, as employed in this delirious pursuit, after the downfall of the Western Empire ; but no ideas seem then to have been entertained of discovering, by chymical process, any remedies for the cure of diseases. About one thousand years after the edict of Dioclesian, during the general ignorance of Europe, this specious art of making gold, again met with a favourable reception. Metallurgy, or the fusing, forging and hammering of metals was practised in the remotest ages ; we may follow it up to Tubalcain and Vulcan, and are at length lost in fable.

THE Greek Writers whom I am about to mention, copied largely from Galen : their anatomy and theory of medicine, was entirely Galenical, and in most instances, their practice. Oribasius's (P. C. 360.) great work, called the Abridgement of Medicine, is almost throughout a compilation ; the principal original observations introduced into it are some new sorts of gymnastic exercise, and the description of a species of melancholy madness, where the insane person frequented church yards and tomb-stones.

ÆTIUS, P. C. 500, the compiler of a large volume, treats of more diseases than Oribasius ; the symptoms and method of cure are also marked at greater length. We meet in him, with many observations omitted by Celsus and Galen, particularly on the surgical operations, on the diseases of women, the causes of difficult labours, and modes of delivery. He takes notice of the worm under the skin, a disease frequent

quent at this day amongst the African negroes. In ulcers of the bladder, he recommended the internal use of hot medicated waters. *Ætius* studied medicine at Alexandria, and relates some ridiculous ceremonies, and some superstitious and empirical practices of the Egyptians, in order to expel diseases.

ALEXANDER TRALLIANUS, P. C. 560, is said to have practised at Rome: he is not so diffuse as either of the two former writers, his works have more originality, and will alone suffice to give a distinct and comprehensive view of the medical practice in those days. Trallian's style is concise, and made up of words in common use; diseases are well arranged, and discriminated from others which they nearly resemble, with great sagacity. Trallian is the first who prescribed Rhubarb in the dysentery, and Iron to be taken internally in a schirrhus of the spleen. Since that time, we have found out very powerful remedies from the solution of this metal in the Chalybeate waters. In female obstructions, chronic diseases, weakness of the stomach and intestines, aqueous solutions, and other preparations of iron, have often produced the most salutary effects. In some local pains, and even in the gout, Trallian applied Cantharides externally, and directed an abstemious regimen, with exercise. In severe nephritic paroxysms, he bled. In Fevers accompanied with a redundancy of Bile, he preferred gentle purgatives to venesection. He mentions the case of a person,
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who discharged a tape-worm, twelve cubits in length, which was forced from the intestines, by a dose of *Hiera Picra*. He describes several species of melancholy insanity, and in the cure, trusted more to purgatives, and still more to diet, baths, exercise, travelling and amusements, than to a jumble of drugs. The hellebore then had fallen into some disrepute. He makes several new remarks on air, water, baths, exercise, and other means to preserve health. On some occasions he betrays a weak credulity in amulets and charms. Notwithstanding those faults, there are many excellent observations in his book, which is calculated for use and practice. Surgery and female diseases are omitted by Trallian.

SURGERY derives intrinsic information from Paulus Egineta, (P. C. 640 :) his treatise on the manual operations, is superior to Celsus, and all the other ancients. He directs how to extract darts; to perform the operation sometimes required in dangerous ruptures or herniæ, where the intestines cannot by any other means be returned back; to tie up punctured arteries in the operation for the Aneurism. Galen, Paulus, and all the ancients, speak of one species only of aneurism, and define it to be "a Tumour arising from arterial blood, extravasated from a ruptured artery." The aneurism from a dilatation of the artery is a discovery of the moderns. In violent inflammation of the throat, where immediate danger of suffocation threatened, Paulus opened into the wind-pipe

pipe from the neck, a passage for the air : in technical language, this is called bronchotomy. In obstinate defluxions upon the eyes, he opened the jugular veins. He describes the manner of opening the arteries behind the ears, in chronic pains of the head. The orifice of Issues and Setons was then made with the hot iron. He wrote on obstetricks, on difficult labours, and other female diseases. He describes a species of severe cholick, denominated by the moderns Colica Pictonum. He advised the use of warm medicated waters in the leprosy. Fabricius ab Aquapendente, a celebrated surgeon of the sixteenth century, follows Celsus and Paulus, as text-books : some of the moderns, without confessing the plagiarism, have dressed up Paulus in a new language, and published the Greek surgery as their own.

ANOTHER Author, remarkable chiefly for his correct History of the Plague which broke out at Constantinople (P. C. 640.) where he then resided, is Procopius. This is the most dreadful pestilence on record : it began in the reign of the Emperor Justinian, continued, it is said, 52 years, spreading from one country to another in succession, and almost depopulated the earth.

HAVING now attempted to give some faint idea of the state of medicine, and of the principal Medical and Surgical writers in the Roman Empire, I shall finish with a few observations on the gymnastic medicine and baths, on the slaves who
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are reported to have practised Medicine at Rome, and on the title of Archiater.

EXERCISE, unctions, frictions, and baths occur incessantly in the ancient medical writers of Greece and Rome, as remedies to preserve health, and to remove several diseases. Herodicus, we have seen, first introduced this species of Medicine into Greece; but in Rome those spacious and majestic buildings, called gymnasiæ, were not erected before the reign of the Emperors. Vitruvius, the contemporary of Augustus, describes the gymnasiæ of Greece alone; from which, exclusive of other strong proof, we may infer, that no public structures of that nature then stood in the Roman metropolis. Asclepiades seems to be the first who brought the gymnastic medicine and baths into repute at Rome. Numbers of those public fabrics founded by the different Emperors were astonishingly magnificent, and of almost incredible magnitude and capacity: in H. Mercurialis may be seen plates and figures of their elevation, form and dimensions. They contained apartments where exercises were performed; apartments for cold, warm, and vapour baths, for frictions and unguents; others were rhetoricians, philosophers, and physicians assembled to walk, to converse, and to dispute, and where they might give Lectures. Plato and Aristotle both taught in the Greek gymnasiæ.

IN the rude ages of Rome, the youth, after the fatigue of military exercises, often bathed in
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the Tyber: refinement, delicacy, and effeminacy introduced covered buildings for similar purposes. In the palestræ, or roomy quadrangles, allotted to the use of exercises, youth was initiated into the military Tactics; there too the gladiators and athletæ practised, in order to be prepared for the public exhibitions and brutal entertainments of the amphitheatres: here they rode, fenced, threw the dart, the javelin, and the discus: boxing, wrestling, running, and military dances also made a part of the athletic sports. The usual manner previous to such robust and vigorous bodily exertions was to strip, the waist alone being covered, and to rub themselves with oil; some powder or dust was afterwards thrown upon them, and assisted in preventing too great a diffusion of sweats, and consequently fatigue; it enabled them also to grasp more firmly with their hands made slippery by unction: after exercising they returned, and were rubbed down with particular instruments, or sometimes with coarse or soft cloths and sponges, from the oil, dust and sweat; they then entered the bath, and on coming out were again gently anointed, the better sort with perfumes or scented oil, in which various odoriferous ingredients were infused, and which served to restrain too copious exhalation from the pores. From the bath they generally went to supper, which was the principal luxurious meal with the Romans, and was eaten in a reclining posture. To execute all the different menial offices in the gymnasiæ, a numerous

retinue

retinue of servants and slaves were employed, each of whom had their separate department and duty, and were under the controul of the master of the palestræ or exercises.

NUMBERS came to the gymnasiæ solely for bathing, and occasionally, perhaps, for frictions. The bath was frequented for health, and as a luxury that they might go to supper with a clean skin, linen shirts being then very seldom used. Galen complains, that in his time almost all classes of men bathed daily; every gentleman we understand had a private bath at his own house, which was sumptuous and highly adorned. Seneca exclaims, that many even of the inferior ranks would not be satisfied unless the walls of their private bath were decorated with Alexandrian marble. In the publick cold bath they had room to swim: this was a practice very general amongst the Greeks and Romans. The luxurious, effeminate, valetudinarian, and diseased, generally repaired to the warm bath, except probably in sultry weather, when warm water could neither be so agreeable nor refreshing. Besides a warm aqueous bath, there was also a sudatorium for vapour and dry heat to force sweats. At the Baïæ, recommended by Celsus, a warm vapour arose spontaneously from the earth, and answered the intention of a sudatorium. Cælius Aurelianus speaks of the utility in several diseases, "*locorum natura spirantium, quo sudores moveantur.*"

SEVERAL

SEVERAL Roman Emperors maintained public baths at their own expence ; but in others the sum paid for liberty to bathe was so trifling, that all the inferior orders of the inhabitants could, when necessary, and they had leisure, indulge in that luxury. The Roman women, probably bathed at home in private : yet in the dissolute ages of that people, we learn from Juvenal, that women often resorted to the public baths, intermixing promiscuously with the men, until imperial edicts were issued, prohibiting that profligate indecency. A few baths were afterwards erected for the exclusive use of the female sex. Throughout most of the Asiatic countries, and at present amongst several of the Mahometan nations, bathing the whole body in water is as common as washing the hands and face with us. That this practice did not originate from the want of linen or cotton may also be doubted, as these were manufactured in Egypt and India, in the earliest ages of which we have any written memorials. In all sultry scorching climates it is natural for men to repair to a cool bath, both to relieve the burning of the skin, and the languor induced by excessive heat. In Alexandria alone, when taken in the 6th century by the Mahometans, there were 4000 baths.

A VARIETY of exercises were prescribed by the ancient physicians ; those of a gentle nature were carriages and litters : pensile beds still more delicate, invented by Asclepiades, and friction of the external surface might, without doubt, have their

their utility in lingering and chronic diseases, where more effectual agitation could not be endured. Asclepiades employed likewise penfile baths, in which bathing and delicate exercise were united: Sailing they considered as a strong exercise. Declamation, or exertion of the voice, was prescribed in some diseases of the stomach, indigestion, and pain about that region: Galen is abundantly prolix on the various exercises, and in regulating the gradations to which they should be extended. By means of clean linen, and riding on horseback, we may safely in our variable watery climate, dispense with a great part of the ancient gymnastic toils and systematic discipline: not that cold bathing, used in moderation, is without its advantages in washing away impurities from the skin, and in sultry weather invigorating the languid constitution. How far the gymnastic medicine may be beneficially prescribed in the cure of diseases must be a future consideration.

AMONGST the physicians who practised at Rome, some slaves are enumerated. Antonius Musa, originally of servile condition, performed a cure on the emperor Augustus, who laboured under a weak habit of body, and was restored by cold bathing; for this service the senate decreed a statue to be erected to Musa. Some slaves, kept in the houses of physicians to prepare their medicines, are said to have acquired their freedom, and to have commenced doctors and surgeons. A few young slaves

of ingenuity were trained up to gross ideas of Physick and Surgery: they assisted at the baths, applied unguents and perfumes, and performed the offices of friction, and of tonsors, &c. We find amongst some legacies of rich Romans, Physicians, Surgeons, Preceptors, and black cattle, promiscuously bequeathed to their friends and relations: many of them were unfortunate captives taken by the chance of war. In the houses of a Roman Grandee might be found almost every profession and mechanic art. The number of wretches maintained by a private Roman family, whose life and death depended upon the will and caprice of a master, appears now incredible. Crassus, one of the Triumvirate with Cæsar and Pompey, and the richest man in Rome, possessed a multitude of slaves equal to a large army.

It appears that many of the slaves employed in the different occupations at the baths, were frequently called Physicians: the term was indiscriminately applied, as we now confer that of Doctor upon the most contemptible Empiricks. Mr. Le Clerc has proved, from indubitable testimony, that at Rome the Medical profession was not considered as ignoble: this Gentleman has taken some pains to collect vouchers, to rescue the Faculty from such base alliance and humiliating condition. In Egypt Medicine was practised by the Priests, and by some Kings; in India it was confined to the learned sect of Bramins: Esculapius, the first Physician of Greece,

Greece, was deified, and his descendant, Hippocrates, honoured with a golden crown: Democedes, the Greek Physician, was familiarly admitted to the table of Darius. At Rome Asclepiades and Alexion were the intimate friends of Cicero: Charicles, Physician to the Emperor Tiberius, is particularly mentioned by Tacitus as the *friend* of that Monarch, with whom he was familiarly invited to table, and whose death that Historian tells us he prognosticated to Macron two days before it happened. The amount of a single fee paid to Charmes, a physician of Nero's reign, and the princely legacy left by Crinas, a celebrated Empiric of the same reign, to rebuild the walls of Marseilles, are totally unparalelled in modern times. Mr. Le Clerc quotes several respectable authorities to prove, that under the Roman Emperors, the royal Physicians, or Archiaters of the palace, held the second rank in the Empire. Amongst the Arabians and Saracens, Mahomet's followers, Medicine was held in supreme respect and veneration.

ARCHIATER, a title conferred upon some Roman Physicians, has given rise to a grammatical controversy. It appears that this distinction included not only the Physicians to the Emperor's person, but likewise those appointed to attend the sick poor in the several districts of Rome, and in the distant towns and villages. An ample salary out of the public treasury was allotted to the Archiaters,

chiaters, they were exempted from all taxes, and were indulged with profitable and honorary privileges. A similar institution, though not so honorable nor lucrative, is at this day supported at the public expence in Italy, and some general establishment of the same kind is greatly wanted in Britain. Hospitals alone, it is demonstrable, are totally inadequate to effect any great national savings amongst the lower and industrious orders by means of Medical assistance. At Rome, Hospitals for Sick, a Medical School, and a College of Physicians or Archiaters, who examined the capacity of candidates previous to admission, were erected under the Emperors. At what era Archiaters were instituted, is yet a matter of dispute: Andromachus, Nero's Physician, is the first we read of dignified with this title.

C H A P. V.

The Destruction of the Western Roman Empire, by the Goths and Vandals, in the sixth Century : Of Mahomet, and the irruption of the Arabians : their Effects on Medicine and Literature : Of Arabian Writers on Medicine and Surgery : The Origin of the Small-Pox and Measles.

A DARK chasm of nearly three hundred years now ensues in Medicine, Surgery, Literature and Arts. The Roman Empire oppressed by internal tyrants, the Emperors and soldiers, sunk into an abandoned effeminacy and corruption of manners, had been successively invaded, several of its frontier provinces torn off, and after some centuries of defensive war was finally overturned by the torrent of northern barbarians. The final overthrow of this mighty colossus in Italy and the west of Europe, happened in the sixth century of the Christian era. The history of this barbarous inundation is a continued scene of unexampled cruelties ; blood and desolation marked the footsteps every where of those fierce savages. Men, women, children, and populous cities were involved in one promiscuous ruin, and extirpated by fire and sword : no age, sex, rank, not even the sacerdotal order, could escape their fury and vindictive ferocity. All the sciences and arts of Rome then became over-

whelmed in the general wreck. The eastern part alone of the Roman Empire still subsisted in splendor; and their feeble monarchs, distinguished by the title of Greek Emperors, resided at Constantinople.

THIS catastrophe was immediately succeeded by another memorable event. Six centuries after the appearance of the Messiah, a new religion arose in the east: the Arabians, under Mahomet, (P. C. 622.) and his successors, sallied forth sword in hand, from the deserts of Arabia, to propagate his religious doctrines, and with rapidity subdued several great kingdoms and provinces in Africa and Asia, and in Europe a considerable part of Spain. The Alcoran, those wild rhapsodies of Mahomet, and the sword, were the only studies in repute, or even tolerated amongst his first disciples. Under the first successors to the Arabian prophet, that noble monument of ancient literature, the Alexandrian library, the most magnificent collection of books that the world could then boast of, was consumed to ashes. In this conflagration, four, others say seven hundred thousand volumes perished, six hundred only were saved from the flames. During the first paroxysms of their fanaticism, innumerable works of Science were eradicated. Hippocrates, Aristotle, Galen, and Dioscorides were amongst the few spoils of medical genius preserved from destruction.

ON the fall of the Roman power in Italy, and during several succeeding centuries, swarms of indigent

indigent freebooters from Germany, and the northern forests of the continent, kept Europe in perpetual alarm, by their formidable invasions and piracies. The Franks, about the close of the sixth century, had possessed themselves of Gaul, the Huns of Panonia, the Goths and Lombards of Italy: the numerous hive poured out from the frozen loins of the North, had covered the most fertile spots of Europe. England, when the Roman legions had been withdrawn, was successively invaded by Saxons, Danes, and Normans. In consequence of this deluge of barbarians, fanatics, or illiterate warriors over Europe, and over part of Asia and Africa, we have no medical author, at least no improvement in this science, from the period of the Greek writers, mentioned in the last chapter, until the beginning of the *tenth* century. Science and medicine is even then confined to the Arabians alone. Schools for the cultivation of literature, it is true, had been built long before the tenth century, in several kingdoms of Europe. The university of Paris was founded by Charlemagne, (P. C. 800.) and Oxford in England by Alfred. Irish historians assert, that colleges had been earlier erected in that island, than in either France or England, and that they were much frequented by students from the continent of Europe. The scanty pittance of learning that survived the destruction of the Roman Empire (Greece excepted) was solely possessed by the clergy. The Nobility and gentlemen could neither write, read

nor reason. In less than one century after the Northern barbarians had settled in their new conquests, every vestige of Roman literature, taste, and almost of arts, were either obliterated or demolished. During four centuries after, Europe does not produce one author that deserves to be read, nor any one art, or useful invention. The illiterate Goths would not permit their children to read or write, nor to be instructed in any science but that of war : they imagined that the arts and sciences had enervated the Romans, and debased their minds.

WHEN the religious frenzy of the Mahometans was abated, after they became enriched by commerce, and satiated with conquest, their military ferocity subsided : arts and literature were then cultivated with great industry : the medical profession in particular, was rewarded and encouraged with rank, and bountiful emoluments, superior to every other nation where this art had hitherto been exercised ; and they early endowed several medical schools in Persia, in Africa, and in Spain. It became a custom with the Mahometans, wherever they built a Temple of Worship, to add to it a school, and an hospital for the sick. Historians report that one of the Mahometan caliphs, in the year 820, sent to the Greek Emperor at Constantinople, to request copies of his best books, which he ordered to be translated into Arabic, by some of the Jews or Greek Christians. Galen had been first translated into the Syrian language,

guage, but the translation was wretchedly executed, and adulterated with the vain fables and astrology of the Arabians. Aristotle too was studied with incredible ardor by the Mahometans. Magic, judicial astrology, and the interpretation of dreams were also in high repute, and by which the Mussulmen regulated the most important enterprises. Such ridiculous follies which all wise men look down upon with silent contempt, helped to support enthusiasm and imposition. The Arabians, probably, reaped the fruits of the observations made by the Babylonians, Egyptians, and Greeks in Astronomy. That division of the heavens into twenty eight mansions of the moon, is, however, peculiar to the Arabians, and is different from the Greek constellations: they denote merely those stars to which the moon is near every night, in her monthly course round the earth. Their astrologers and conjurors found them very convenient in the exercise of their deceptions. Algebra is also a science, and a word derived from Arabia: it is that kind of universal arithmetic, by which intricate mathematical problems are resolved, and arithmetical operations greatly facilitated.

THREE new diseases, the Small-pox, the Measles, and the Spina ventosa, are first described by the Arabians. The two former diseases, which have since unpeopled more of Europe than all the fiercest wars, bloody exploits, and violent deaths, with which the annals of history and jurisprudence are stained, had never before been seen in any part of the globe,

globe, frequented by Europeans ; at least no history is found of them in any ancient medical author, poet, or historian of either Greece or Rome. Mahomet's followers are said to have exported those two specific poisons from the deserts of Arabia. The most remote traces which I can find of the Small-pox, is in Egypt, during the reign of Omar, Mahomet's successor. Aaron, a native of Alexandria, is mentioned by Rhazes, as having, nearly about that time, written on the Small-pox. Variolous poison was soon spread by the Mahometans through Syria, Egypt, Persia, Spain, and wherever they carried their victorious arms. Many centuries after, the crusades or holy wars were instrumental in diffusing this exotic venom more widely over Europe ; and since that time, both those diseases have committed incredible havock amongst the human species.

RHAZES (P. C. 900.) and Avicenna, both give a correct history of the distinct and confluent, or more properly of the benign and malign Small-pox, of the diagnostic and prognostic, the favourable and bad signs, and the method of cure. Rhazes was by birth a Persian, and practised at Bagdat, where he presided over an hospital. His treatise on the small-pox and measles, is translated from the Arabic, by the care of Dr. Mead, and may be seen entire in the latter's works, or in a separate dissertation. He appears in many instances to have treated them judiciously, and recommends the cooling regimen to a degree which physicians, practising

practising in northern climates, might not unreasonably think bordering on excess.

IF the feverish heat and symptoms in the Small-pox raged with violence, Rhazes directed copious blood-letting not only before the eruption, but even after, if the fever had not abated. In imitation of Galen, young persons under fourteen years of age were cupped only. Water cooled with ice or with snow was given for drink in large draughts; and if this did not pass off by urine or sweat, or the fever abate, he directed the water to be forced up by vomiting: this was done to promote the eruption of the pustules. For the same intention, the sick person was wrapped up in clothes, his body rubbed all over, and cold water given for drink: or two vessels containing hot water were placed one before, the other behind, and the body covered only with a shirt: the hot vapours ascending, were expected to soften the skin, and to facilitate the eruption. This vapour was not suffered to cool upon the body, but was wiped off with great diligence. The legs and feet were also bathed in warm water, and sometimes emollient Poultices were applied to the feet.

SEVERAL applications were prescribed to defend the eyes, if redness and itching, indicated a crowd of pustules pressing upon those tender organs. He also took great care to protect the throat from numerous pustules by gargles, and if great hoarseness and straitness of breathing, threatened future suffocation, blood was drawn. To ripen the small-

pox,

pox, the vapour of warm water was employed as before described. Pustules in the legs that were large and maturated, he directed to be opened. Avicenna directed the ripe pustules to be opened with a gold needle, and the moisture to be soaked up with cotton. In other cases, where the small-pox abounded with moisture, the sick were directed to lie on powdered roses, rice-meal, or a mattraß stuffed with those ingredients. In cases of profuse diarrhœa, or of long watching, they gave Opium. On the declension of the disease they often purged to exonerate Nature of an oppressive load.

ALL flesh meat, fish, hot and high seasoned things, and milk were forbidden. Barley water mixed with sugar, or a decoction of raisins, figs and fennel seeds were given for drink, and in violent fever, the cooling acid juice of pomegranate seeds, boiled with sugar, and a small portion of gum arabic; the chamber was also kept cool. The “Aqua Mulsæ,” or honey and water, fermented together, was a favourite febrile drink of the Greeks and Romans. Rhazes describes the composition of many syrups and oxymels, given in small-pox: they were a mixture of the juices of several acid fruits and vegetables, to which vinegar and sugar were superadded; and sometimes a small quantity of camphor made one ingredient in the cooling syrups and electuaries. To propel the Measles, where the sick seemed to labour under great anxiety, and were prone to faint, they advised immersion of the body in cold water, and friction of the skin.

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THE physicians of Arabia first made use of the milder purges, Manna, Cassia, Senna and Myrobalans. They are the first on record, who speak of sugar and sugar-candy, extracted from the sugarcane, and who ushered syrups, juleps, confections and conserves into medicine; compositions in which sugar is often one of the principal ingredients. Before the Arabians, honey was commonly employed by the Greeks and Romans, to wrap up nauseous medicines. To *Materia medica*, and to Botany, the Arabians added several plants and oriental aromatics; amongst the latter are musk, nutmeg, mace, and cloves. To magnify ostentation, and encrease their profits, gold, silver leaf, bezoar, and precious stones were taken into the medical shops, and surprising virtues invented, to tempt credulous purchasers. The Arabians first mention a chymical process, called distillation, which it is probable they learned from the Egyptians: Rose water and some oils were, however, the only production of their chymical laboratories. In describing the essential signs of diseases, the Arabians were negligent and incorrect: then follow a formulæ of prescriptions, and compound medicines. Their Theory and Practice of Physic, was entirely borrowed from the Greeks, and blended with a heap of superstitious nostrums: they made no additions to Anatomy, but took all from Galen. Cantharides were applied externally in the form of blistering plasters by the Arabians: Archigenes, Aretæus and Alexander Trallianus had, on
some

some few occasions, employed them ; but in general the Greeks and Romans prescribed acrid sinapisms of mustard, or other ingredients of that nature. The Arabian physicians limited the application of blisters to a very small number of diseases, such as lethargy, apoplexy, and some analogous drowsy complaints ; and for many centuries after they were not used in fevers of an infectious and malignant nature, in internal topical inflammations, in pains of the breast accompanying phthysical complaints, in all which blisters are now considered as powerful remedies.

AVICENNA'S "Canon Medicinæ," is compiled principally from Galen, Rhazes, and Halyabbas. This book, or general system of Medicine and Surgery, many ages after was celebrated throughout all the schools of medicine : it was first brought into Europe by the crusaders, and from that time, until the sixteenth century, Avicenna was regarded as the Prince of Physicians, and held in such profound veneration, that Hippocrates and Galen were seldom mentioned. Avicenna's canon, and the ninth chapter of Rhazes were the text books in medical schools, and the former was honoured with swarms of commentators. Avicenna has given a catalogue of the *Materia Medica*, and of the "*Formulæ medicamentorum*" then in use. He commended hot medicated waters in obstructions and inward weakness : he condescended even to describe the composition of cosmetics to polish the skin, and to make hair grow or fall off. Rhazes
des-

described correctly the *Spina ventosa*, accompanied with an enlargement of the bone, caries and acute pain: he is likewise the first author who devoted an entire chapter to the diseases of infants. In difficult labours he recommends the fillet to assist in the extraction of the foetus: Avicenna for the same purpose recommended forceps. Rhazes relates several impositions of the professed empirics of his nation.

AVENZOAR, (P. C. 980.) and AVERRHOES I shall be able to dismiss with a few remarks. The first wrote upon Surgery, but thought it incumbent upon him to apologize for descending to treat of subjects so mean. Surgical operations, amongst the Arabians and Mahometans, were then practised by men of low servile stations; and from them we are not to expect any very interesting improvements in that useful art. Avenzoar draws the diagnostic symptoms of two rare inflammations, that of the *Mediastinum* and *Pericardium*. He recommends a drachm, or thereabouts, of black hellebore in menstrual obstructions, and in some particular cases, as a diuretic: in small quantities, it was not found to produce any violent or dangerous effects, and is since proved to be a powerful emmenagogue. Averrhoes's intention was to rectify theoretical controversies, by the assistance of Galen and Aristotle: these, like a thousand other absurd reveries, are long since evaporated.

ALBUCASIS first restored Surgery amongst the Arabians to some repute: Rhazes complains of their gross ignorance, and that the manual operations

tions were performed by the physicians servants. Albucasis enumerates a tremendous list of surgical operations, sufficient indeed to excite, in men of any tenderness, dread and horror. The hot iron and cauteries were favourite remedies of Albucasis and the Arabian surgeons : in inveterate pains they reposed, like the Egyptians, great confidence in burning the part. He describes accurately the manner of drawing away the water; by tapping the Abdomen in the Ascites. He describes different instruments to draw blood; and has left a more ample and correct delineation of surgical instruments than any of the ancients. He gives various obstetrical directions for extracting the fetus, in cases of difficult labours. He mentions the Broncholele, or prominent tumour on the neck; which, he said, was most frequent amongst the female sex. We are informed by this writer, that the delicacy of the Arabian women (I should suspect rather the jealousy of the men) did not permit male surgeons to perform lithotomy on females; but when necessary, it was executed by one of their own sex.

AN Arabian Author, Abi Osbia, furnishes us with a catalogue of three hundred medical writers of the Mahometan religion. I have mentioned those who signalized themselves by any useful publication or discovery : the rest are beneath mediocrity, and barren of instruction : men would fill their heads to little advantage with such useless lumber, and they are deservedly permitted to moulder in dust
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and oblivion. There are many manuscript copies of Arabian Medical authors preserved in different libraries of Europe, whose works it has not been thought necessary to translate and to commit to the press.

EUROPE, from the demolition of the Roman Empire, and the era of Mahomet, does not in the course of the five following centuries, furnish one subject for criticism in literature or medicine. The disgusting labour of historians in that period is a dull record of the follies, barbarities, and stupidity of our hemisphere. The Roman spoils had been divided amongst its fierce invaders: this feudal system, afterwards corrupted, produced innumerable sources of anarchy. Europe was filled by degrees with strong castles, with thousands of petty tyrants and imperious barons, who were waging incessant hostilities against each other. The great bulk and lower classes of the people, were reduced to an ignominious state of vassalage, and trembled under the harsh rigour of aristocratic despotism. Genius and arts were still kept alive in one small corner alone of Europe, Greece; but even at Constantinople, the capital, literature was absorbed in theological controversies. Almost every other country of the European Continent was distracted with private quarrels, wars and rapine: contested rights, personal injuries and disputes were terminated by combats, by the ordeal of fire and water, and other absurd modes of jurisprudence: the roads were infested with gangs of robbers,

and travelling attended with great risk and danger: the intercourse with provinces even of the same kingdom was rare, and attended with great hazard; and after escaping depredations on the high way, a stranger, who should settle but for a short time on the lands of a proud Baron, might be claimed as a vassal, or perhaps as a slave. Towards the close of the eleventh century, these disorders had reached the extreme of degeneracy.

C H A P. VI

From the eleventh to near the middle of the fifteenth Century, the STATE of MEDICINE and SURGERY: the Importation of the Leprosy into Europe.

IN the interval, from the 11th to near the middle of the 15th century, physic, arts, and literature, began to revive, though by very slow gradations. It was not before the sixteenth century, that the human genius had recovered from that profound state of lethargy, under which it languished so many ages. Italy, by its proximity to Greece and Constantinople, where arts and elegance still survived, (and which imported the luxuries and commodities of the east by the Black and Caspian seas) had made some progress in refinement, industry, and commerce. The first means, however, which contributed to dispel the general rusticity and ignorance of Europe arose from superstitious follies, and romantic expeditions: I mean the religious Crusades. To this wild enthusiasm Europe is considerably indebted for the recovery of her liberty and reason: from this cause followed the most salutary change in national police, jurisprudence and civilization.

SYRIA and Palestine, was conquered in the eleventh century from the Mahometan Caliphs by the Turks or Tartars, a fierce race of men, who

rushed out from the immense Asiatic wilderness, called Great Tartary, and who embraced the religion of those they had subdued. Pilgrimages from Europe had frequently been undertaken by the devout Christians to behold the sepulchre of Christ at Jerusalem. The different Mahometan Caliphs had encouraged this as a lucrative trade; but the Turks, now in possession of the Holy City, treated many Christian devotees with cruelty and outrageous oppressions. Europe then illiterate, credulous, and superstitious, was fired with indignation and resentment. The religious delirium and enthusiastic zeal against the infidels, was inflamed still higher by another circumstance: an obscure prophecy of the Bible led many Christians to expect the downfall of the world, and a universal conflagration; they set out, therefore, at the instigation of the Monks and the Pope, to exterminate the Saracens, or to perish, like martyrs, on the tomb of the Messiah.

All Europe, kings, princes, nobles, men, and even women, during two centuries, were engaged with fanatick and fruitless ardor, in wresting Palestine from the infidels. Happily grand effects and substantial benefits, not then foreseen, were derived from this epidemical and bigoted madness. In the course of that long war, most of their vagabond armies were obliged to march through Italy, and through Greece and Constantinople. Here they beheld with admiration and astonishment, a splendid city, numerous manufactories,
and

and a refined taste in arts and amusements. Some of the crusaders who returned back from the holy land, brought with them copies of Aristotle, and of the Arabian medical authors. This was one of the principal means, by which Arabian learning was first introduced and studied in Europe: science, and the liberal arts were called the study of the Saracens. The commerce of the Italians with the Moors, who had settled in Spain, was another means of introducing Arabian literature. Of the few imported medical authors, Avicenna and Rhazes took the lead, and were alone read in Europe. The Greeks had been translated into Arabic, from this they were again changed and disfigured by compilers or clerical commentators into barbarous latinity, the only language then, and for many centuries after, in which learning of any sort was conveyed.

AN accidental discovery in Italy, about the middle of the twelfth century, (1137) of Justinians pandects, contributed also essentially to break the thick clouds of ignorance, that had so long darkened our horizon. This code of Roman jurisprudence, which by some lucky incident had escaped the general wreck, was, in a few years, studied with avidity in several countries of Europe, and professors of civil law were appointed to read lectures. Lectures on civil law were read at Bologna, at Oxford and at Paris; and the study of the Roman juridical code, spread with rapidity through most kingdoms in Europe. At Bologna,

in Italy, in the year 1262, there were ten thousand; and at Oxford, in the year 1340, there were thirty thousand students. Montpellier in France, and some colleges of Italy, were then the most celebrated medical schools of Europe. Italy took the lead not only in Medicine, but in all the polite arts, and compositions of elegance. In England, I cannot perceive that medicine was studied at either of our universities, as a regular science, before the end of the fifteenth century. The university at Paris, founded by Charlemagne, *first* conferred degrees of bachelor and doctor, in the year 1231. The forms and times of study were then regularly established, and imitated by several other universities. Those who reached the degree of Doctor, in any of the learned professions, were advanced by that distinction to the highest rank and dignity then known in any state, the rank equal to military knighthood. The statutes of the Schola Salernitana, and those of the medical school at Naples, seem to have been prior to those of Paris.—By them, the Physician must have studied seven years, and, after being examined on Galen and Avicenna, he was invested with the ring and cap. The Surgeon was qualified after one year's study of Anatomy.

THE art of making paper, invented in the eleventh century, increased the number of manuscripts, and lessened the price of books. Printing, that important art, invented afterwards in the fifteenth century, spread light over Europe. The
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ancients had either written on the papyrus or upon parchment, and the books of the latter description, were now extremely dear. Few private persons before this discovery possessed a single book. In some monasteries they had but one missal. A book of homilies, compiled by some French Saint, sold for two hundred sheep, besides a large quantity of corn. Even so late as 1471, Lewis the XIth of France, borrowed the works of Rhazes the Arabian physician, from the Parisian faculty of medicine; but, previously was obliged to deposit a quantity of plate as security, and to find a nobleman to join in an additional bond for the care and return of the book. This is a proof that manuscripts and books were then exceedingly scarce, and that science and medicine were in the hands of a small number. The history of the church during the dark ages affords many examples of bishops assisting at councils, who made the sign of the cross, because they had not learned to write.

SCHOLASTIC theology, scholiums, magic, Roman jurisprudence, and the canon laws enacted by the different churches and monasteries, yet embraced almost the whole scope of their studies. Aristotle too was universally admired; and unfortunately his subtle refinements gave a wrong turn to the first efforts of reviving genius in Europe. This little stock of learning was principally confined to the clergy and monks, who on that account engrossed most of the religious and civil employments, accompanied with profit or precedence,

and who principally exercised the profession of physick.

CHIVALRY, which grew up with the crusades, was long after their termination the darling passion and principal employment of the nobility and independent gentry in Europe. Tilts, tournaments, and knight-errantry, were then in full vigor, and contributed more effectually and speedily, than dry systems of morality, to refine and polish the manners. Europe from another circumstance was enlightened and civilized. The powerful and the petty barons embarked in the crusades, had in the course of these distant wars sold part of their lands and arbitrary privileges for a small pecuniary consideration: numbers by this opportunity redeemed themselves from slavery and vassalage: cities and communities were formed, which gave liberty and protection to industry and arts. In England commerce and arts were slow in advancement, when compared to Italy and other maritime parts of Europe. For this, several reasons may be assigned: the distraction of the Saxon heptarchy, the irruption of the Danes, the conquest of the Normans, the Crusades, the incessant attempts and ambitious enterprizes of their kings afterwards to possess the crown of France, and lastly, the civil wars of the York and Lancaster line contending for the throne. All these successive and violent revolutions banished leisure, and either prevented or interrupted the cultivation of arts, industry and science. Real literature in Eng-
land,

land, for I do not consider their theology, and scholastic disputes deserving of that name, appears to have first originally dawned in the thirteenth century, with Bacon, the monk of Westminster-Abbey.

DURING this abasement of the sciences, Jew physicians were employed by most of the Popes and crowned heads in Europe. John of Gaddefden in the fourteenth century, is the first Englishman appointed court physician. Jews, or foreigners, especially from the Crusades, had alone been thought qualified for that post. Their knowledge of the Arabic language gave them an advantage in studying the medical authors. St. Lewis, King of France, had caught the leprosy in the holy wars, and his Jew physicians prescribed to him a nauseous potion, the blood of young children. The leprosy, one of the evil fruits of the Crusades, was then a very general and common disease through most kingdoms of Europe: in Britain there were many houses of confinement for lepers: in France, eminent historians of that country reckon up two thousand Lazarettos, buildings distinct from hospitals, and endowed by St. Lewis. A Roman army had once carried this judaical scurf from Palestine and Egypt; but in process of time, and by taking proper precautions to separate the infected from the sound, it gradually disappeared: this concords with our own observations of the disease in modern times.

ALCHYMY, or the secret of changing metals into gold, began now to be pursued in Europe: it was one of the grand mysteries which Bacon and all the succeeding chymists were endeavouring to discover. This deceitful art, which flattered the utmost gratification of human avarice, was, for several centuries eagerly prosecuted in England, and still more assiduously in Germany; but dear bought experience and philosophy have now almost cured mankind of that frenzy, and convinced them that riches must be acquired by other means. The chymists conceived another project still more ridiculous and improbable; that was to extract by some chymical process an universal panacea, capable not only to cure all diseases, but endowed also with an exuberant efficacy, which should prolong life far beyond the common course of longevity.

ALBERTUS Magnus, a German, wrote on Alchymy, in the year 1200. Shortly after him Roger Bacon, (1226) a monk of Westminster-Abbey, laid the foundations of Chymistry, and of experimental philosophy in Europe. He was not only an expert chymist, but also an original mechanical genius little inferior to Archimedes. He invented flying chariots, and moving statues. He wrote on the nature of lines, on the telescope, on the reflection and refraction of light, on optics, on glasses, which could magnify or diminish objects, remove them to a distance, or make them to approach near, on burning-glasses, and on meteors and astronomy: he even attempted to correct the errors

errors of the Calendar, and had discovered the composition of gun-powder. This is an uncommon instance of light and learning bursting from the midst of darkness, a cloyster. The clergy, Bacon's contemporaries, considered him as a real conjuror : his writings appeared to them totally mystical, and beyond comprehension : on that account they concluded he must be a magician, and interdicted his works from a place in their libraries. We are indebted to an Italian Salvinus de Armatis (1280) for another useful invention for the Eye-sight, spectacles. Bacon was succeeded at the end of the same century by Arnoldus de Villa Nova, a Frenchman, others say a Spaniard, or an Italian. Arnoldus recommended the distilled spirit of wine impregnated with certain herbs as a good medicine, and a water distilled from certain metals in the leprosy. Raymond Lully, the scholar of this celebrated chymist, wrote several volumes on the universal panacea and philosopher's stone. Isaacus Hollandus and Basil Valentine, a German Monk, who lived towards the end of the 15th century, trod in the same paths. Valentine was an excellent practical chymist, and first prescribed antimony internally : his treatise denominated "*Currus triumphalis Antimonii*," extols the virtues of this powerful metal in many diseases. Paracelsus, the celebrated chymist and empirick of the 16th century, borrowed many of his experiments and medicines from Valentine's works, together with the three original or new elements, salts,

salts, sulphur and mercury: many inventions in the chymical art since published under other names are pilfered from Valentine. From the century in which Bacon lived, medical chemistry may date its origin.

JOHN OF GADDESSEN, (1320,) the first native promoted to be court physician in England, is honourably introduced into the rhyme of our earliest poet Chaucer. In Gaddesden's small work, called "*Rosa Anglica*," men of curiosity may be entertained with a pleasant detail of the diet and cookery of our Gothic ancestors. He speaks of the Small-pox as a disease then familiar, and without any intimation of the infection being recently imported by the Crusades. One of the King's sons, ill of this distemper, he ordered to be rolled up in scarlet cloth, and all the curtains about the bed were hung with linings of the same colour: upon this silly apparatus, Gaddesden laid great stress. He boasts of having sold some recipes to the *barbers* for a considerable sum of money; and of several other impositions practised on ignorant credulity: he recommends in certain diseases, and to promote conception, a few contemptible nostrums, and affected great skill in physiognomy and chiromancy. In his own time, Gaddesden's book was in high renown; at present it appears an insignificant production. Indeed from the downfall of Rome, until towards the sixteenth century, there were very few books written in Europe, at least on medicine or philosophy, that a man of sense

or taste can now read with pleasure : commentaries upon the Arabians were for a long time the boldest efforts of medical genius. The names of those monkish authors are not entitled to historical record, and Le Clerc and Friend may be consulted as a barren catalogue on this occasion.

GILBERTUS Anglicus, (about 1300,) a surgeon, mentions our sulphur baths and some diseases cured by the waters. In all probability, he alludes to Bath or Buxton warm springs ; the utility of which, as baths, had been known to the Romans. Gilbert also, with many others of the clergy and medical writers, commends the royal touch in Scrophula. This is supposed to have been a monkish invention to increase the reverence for kings : it was practised in the dark ages both in England and in France, but is now laid aside since the divinity of crowned heads came to be doubted in this island. Daniel Turner, the surgical writer, relates many extraordinary cures performed by the royal hand of the Stuart princes ; with the expulsion of whom, at the end of the last century, this royal imposition is laid aside. The only comment or answer perhaps that superstitious follies, and supernatural tales of this nature deserve, is to laugh at the author as a weak bigot, or a propagator of untruths. The Calendar of Catholick Saints is full of similar fabulous tricks. Sometimes at present the vulgar and credulous, apply the hands of dead persons to wens and scrophulous tumors upon the neck. His majesty or any of his dead subjects have probably
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equal medical magic in their hands: if any real benefit has ever been derived from either, it can only be referred to the inexplicable force of implicit credulity, and of a powerful imagination.

THE present chapter closes with the recital of a dreadful calamity which afflicted mankind in the fourteenth century. In the short space of four years the plague ravaged round three great divisions of the globe, and is computed to have swept away the fourth part of its inhabitants. One thousand, three hundred and forty-six it raged in Egypt, in Turkey, and Greece, in Syria, and in other parts of Asia: one thousand, three hundred and forty-seven, some trading ships carried the infection to Sicily, Pisa, Genoa, and Italy; the following year it penetrated through Savoy, into France and Spain: one thousand, three hundred and forty-nine, Britain and Flanders were invaded, and the succeeding year Germany, Hungary, and other parts of the European continent. Quarantines had not then been established by any commercial nation of Europe. The symptoms and medical history of this plague are drawn by an eye witness, Guido de Cauliaco, an expert surgeon, and professor at Montpellier. The symptoms of the leprosy, then prevalent in Europe, are also well described by Cauliaco. He is likewise the Author of a Surgical treatise, in which may be seen the practice, and the names of the principal surgical writers in his days.

CHAP.

C H A P. VII.

The destruction of the eastern and last remnant of the Roman Empire at Constantinople, in the fifteenth Century. The discovery of the Art of Printing, and of America. The origin of the Venereal Disease. The rise of the Sea Scurvy. The first rise of the Sweating Sickness in Europe. A general sketch of the progress of Medicine and Surgery, and of the most distinguished Writers, and important discoveries from the beginning of the sixteenth century to the present time, including an interval nearly of three hundred years. Of Anatomy and Physiology. Chymistry and Physics. Learned Societies. Botany. Natural History. Materia Medica, and Pharmacy. Medical practical Writers, and Pathology. Obstetrics. Surgery.

MEDICINE and letters having slept many ages, (except amongst the Arabs) in the grave of Rome, Europe was beginning gradually to awake from its lethargic stupidity. About the middle of the fifteenth century, Constantinople, the last shred of Roman grandeur, was taken by the Turks or Tartars. All the Greek provinces, from the Danube to the capital, had after several centuries of war been reduced, and the degenerate princes of the once powerful Roman Empire could at last boast of but one single city, within the narrow limits of which their whole dominion was contracted. This tottering and only surviving pillar of imperial grandeur was now subverted by
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the barbarians of Tartary. On that revolution many literary men fled from Constantinople and took refuge in Italy, bringing with them the ancient Greek and Roman authors, which had been deposited for ages in the libraries of that city. A few of those precious fragments had before been carried into Italy, but in general lay buried or neglected; very few made use of such books, or as yet understood Greek. Science from this time is abolished in Greece, and trampled under foot by the Alcoran, ignorance and despotism. Learning and Arts now ebbed back to Italy, and flowed in new channels: we shall find them extending to the west of the Alps, penetrating beyond the Rhine and the Danube into the frozen regions of the north, and the original seeds sown by the Greeks and Romans rising up gradually in almost every country of Europe, enriched with improvements and new discoveries. A new invention in Germany, in 1445, the art of Printing, gave new creation and wings to literature: books were purchased at a moderate expence and knowledge expanded. In 1506, Dioscorides was printed: in 1525 Galen: In 1526 Hippocrates: in 1528 Paulus Egineta. Celsus was later in being known; I do not find that he had fallen even into the hands of the Arabians.

HISTORIANS are unanimous in singling out the commencement of the sixteenth century as one of the most remarkable and splendid epochs in the annals of the world: the whole theatre of nature then begins by degrees to unfold to man. Arts and Sciences

Sciences have from that era been prosecuted with unremitting ardour and success, and nature studied not in reveries of the closet, but in her productions. Most of the modern European nations then began to take their rank and political station in the balance of Europe. The modern European languages then began gradually to acquire some settled idiom, energy, and grace, to be polished from Gothic rust and latinity! “ Sound learning and good Authors, which then began to arise in different countries, gave a brilliancy to expression : the Poets, Historians, Philosophers, and eminent Writers purified the vehicles of knowledge in their respective nations.”

A new discovery of that time, at least to Europe, the loadstone, and mariner's compass, encouraged seamen to attempt long voyages. The needle always pointing to the north regulated their course, and emboldened navigators to venture out of sight of land several months together. Portugal took the lead in naval discoveries. Vasco de Gama, their admiral, found out a new and more convenient passage to the East Indies: he first doubled the southern cape of Africa, and arrived by that track at Indostan. Herodotus indeed reports, that before his days the African continent had been once surrounded in the contrary direction. By this modern discovery the traffick through Alexandria and the Red Sea, which the Venetians had restored to its original splendour, and by which the luxuries of the East were poured into Europe,

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was in a short time dried up; and that celebrated city, like the mighty Syracuse, is now degenerated into an insignificant burrow. Another bold nautical adventurer, Columbus, (in 1492,) under the Spanish flag, first discovered the Bahama Islands and Hispaniola, both in the vicinity of the American Continent. Mexico and Peru were soon after discovered and conquered by Cortes and Pizaro. Magellan next penetrated into the immense Pacific Ocean, by the southern extremity of America: after traversing the great South Sea he reached the Philippine Islands and perished, but Sebastian and part of his squadron, performed the first voyage round the globe. Geography by those important events received magnificent additions. A new continent little less than half of the old world; a new race of men hitherto unknown, and the round figure of the earth now incontestibly confirmed, were all subjects for wonder and admiration. Europe from this new world became enriched with gold, silver and profitable traffick, and Medicine gained, especially from Peru, some inestimable remedies. The progress of navigation, and increase of riches, have not only introduced an entire revolution in manners and modes of life throughout Europe, but also various articles of dietetic luxury from Asia and America, which are now in general estimation; such are Tea, Coffee, Cloves, Nutmegs, Sugar, and distilled Spirits, and we may add Tobacco. How far they may operate in affecting the health and character of nations,

tions, have all been hacknied themes of medical and moral discussion.

A SINGULAR disease called the Venereal, in two years after the discovery of America, made its first appearance in Europe. At the Island of Hispaniola, the native Indian females communicated this foul distemper of their country to Columbus's sailors; by them it was imported into Spain, and afterwards carried by the Spaniards to Naples then besieged by the French; the latter by an intercourse with Spanish prostitutes caught the infection, and to this day the French very unjustly are exposed to the opprobrious stigma of having this disease called after their nation. From such a minute spark the infection spread rapidly (as may be readily supposed when no cure had been then discovered) throughout France, Germany, England, and other countries. The Egyptians, Turks and Persians call it the French disease, and so do even the remote Japanese, a proof from whence it was imported to them. In Africa it was named the Spanish disease. The Mahometan Moors, after eight centuries of war, were routed from Spain by Ferdinand; and on that occasion, the Moors, together with the Jews, who were also banished, transplanted the Venereal venom to Africa, a disease to which the people of that continent were before entire strangers.

FALLOPIUS, a very eminent anatomist, who wrote about 1555, speaks of the Venereal disease as an entire new calamity and of modern introduction. From the moment of its first invasion

medical writers had all agreed in the circumstance of its novelty. Astruc quotes upwards of fifty different authors before Fallopius, and in annual succession, of one opinion in this respect. Some of their emphatical phrases are, “*Novum morbi*
 “ *genus, inauditum, invisum, incognitum, ignotum.*
 “ *Novam pestem mundo irremediabilem. Nullis*
 “ *ante sæculis visus, totaque in orbe terrarum in-*
 “ *cognitus. Pestifer morbus, morbus atrocissimus,*
 “ *irruens in homines sævo morfu ulcerum. Diræ*
 “ *lues quam nulla sit ætas antea experta. Pau-*
 “ *peres hoc malo laborantes expellebantur ab ho-*
 “ *minum conversatione tanquam purulentum ca-*
 “ *daver; habitabant in arvis, fylvis, &c.”*

ALL Europe were alarmed with universal consternation at the first hostile encroachments of the Venereal Disease. Its loathsome ulcers affected the genitals, and by degrees the palate and uvula: swellings and buboes arose in the groin: in its more advanced stages, excruciating pains were felt in the bones, especially at night; scabs and small running sores covered the skin; nodes or protuberancies appeared in the forehead; the bones became at length carious, enlarged, and rotten: many, after lingering for months under such wretched calamity, others a year or more, lost their palate, nose, eyes, lips, teeth, genitals, and before death presented a cadaverous spectacle of deformity and corruption: This is no exaggerated picture of the Venereal Disease, when it proved rebellious to all the medicines then in use; and when the Physicians and Surgeons universally confessed what was too apparent, their ignorance

norance of any effectual remedy for the relief of the unhappy sufferers.

THE ancients, who were extremely minute in describing even the most insignificant disease, could never have omitted the Venereal, whose symptoms are so peculiarly and strongly marked, had it been known in their days. In all the ancient medical authors, Historians, Poets, and Satirists, however obscene, there is no notice of it. We have the most decisive evidence that the Spanish crews on their return from Hispaniola imported the infection into Spain: one Squadron had two hundred venereal sick. Whoever will take the trouble to peruse either Le Clerc's, or Dr. Friend's history of physick, and above all Astruc de Morbis Venereis, will be satisfactorily convinced on this topick. Disputes respecting the origin of the venereal infection, in which many of the learned have taken opposite sides, are in these authors investigated to the bottom. A conjecture had been started against the novelty of the American disease, from finding a distant similarity in the ulcers of Job, of King Herod, and of the Roman Emperor Tiberius: these, with many other objections and absurd fables, invented to account for this new phenomenon in medicine, are ably refuted by the above writers. The only certain cure and specifick for the confirmed pox, quicksilver, or mercury, was condemned by the Greek and Roman physicians as a poison, and never used internally, nor in unctions.

AVICENNA the Arabian, mentions some cases of leprosy accompanied with ulcers of the penis, and

heat of urine; but with no other symptom of what is called pox, to distinguish it from a simple Gonorrhœa. In warm climates “*fordes*” collected under the prepuce, was liable sometimes to excoriate the skin. Heat of urine is described by several authors as arising from a connection with lepers, with women afflicted with cancer in the womb, or even in sultry regions during their periodical discharges: the Mosaical law ordained some rigid ceremonies to be performed by the female sex in the latter predicament. Ulcers of the penis, phymosis, and paraphymosis, are likewise specified by many of the antient physicians, particularly by Celsus, who is very minute in the disorders of the Penis and Genitals; but there is no sort of reason to think they were venereal: the genitals are subject equally with other parts of the body to inflammations and ulcers. Gleet and “*lapsus feminis*,” from excess of venery, are also mentioned by C. Aurelianus.

If the reports of some missionary Jesuits to China can be credited, the origin of the Venereal Disease in that country cannot be traced back: in the most ancient of their medical books, it is said to be mentioned as a common distemper, only that its symptoms are of a milder nature than in Europe. Mr. Astruc has with great learning and ingenuity endeavoured to refute this opinion.

So early as 1496, the Venereal disease had made progress over some provinces of France: a public arret of the parliament of Paris was issued in that year,

year, commanding all foreigners infected with this distemper to depart from the city in twenty-four hours, and afterwards, with all possible expedition from the kingdom: they were forbidden to return back again unless cured, under pain of death: all native inhabitants in the same forlorn situation were ordered to confine themselves strictly to their houses, and the venereal poor to be shut up in a public building provided for them in the suburbs at the national expence: all were secluded from mixing with the publick, and ordered to keep within their respective habitations, under the penalty of forfeiting their lives by transgression. At Edinburgh they were banished to a small island in the bay of the sea adjoining to that city. It was then thought that the infection might be propagated at some distance without immediate contact. That the disease was looked upon as totally different from the leprosy, appears from another circumstance: in all the leprous hospitals which then stood in Paris, no venereal patients were admitted lest they should *infect* the lepers. The elephantiasis, or lepra Arabum, at least a disease nearly similar in symptoms, is common in the cold northern Island of Iceland, owing to the rigorous climate, diet, and manner of life of the Natives; but the venereal disease was unknown there until 1753.

A VARIETY of unsuccessful attempts and new experiments were made by the medical faculty to repel this obstinate foe. The whole rotine of regular practice had been ineffectually exhausted.

At length observing in Mesue, an Arabian Author, that quicksilver ointment had been used by the Mahometan Physicians in diseases of the skin; not indeed with any intimation of salivation, they had recourse to mercurial unction, and succeeded far beyond their most sanguine expectations. Mercurial unction was used by Physicians so early as 1497 and 8. Jacobus Carpus, an Italian, (1520) a dextrous surgeon and anatomist, is not the first who used the quicksilver unction, although he is said to have amassed, by venereal practice, upwards of fifty thousand ducats; a prodigious fortune in those days when gold and silver were scarce commodities.

NICOLAUS Massa of Venice (1532) and Fallopius a later writer by twenty years, published a correct history of the Venereal Disease as it then appeared, and the different modes of cure then in practice. Numbers, by their account, fell victims to the rashness of ignorant empiricks, and the violence of the salivation. We are told that the sick were shut up in a room kept constantly heated like an oven, and from which all fresh air was excluded: they were anointed with mercurial unction on different parts of the body, once or oftener in the day, the saliva was forced out in torrents, their mouth became inflamed and ulcerated, and their teeth fell out; so exceedingly, in the extreme of severity, was the salivation, that from 7 to 10 pints were in that way discharged daily, during 7, 10, or sometimes more days. A new method was also early
invented

invented to cure this distemper, and to excite a salivation by means of mercurial fumigation. After previous bleeding and purging, the patient was placed in a small heated apartment or stove; then a small tablet or pasté, made of cinnabar and turpentine, or storax, was laid on coals or on a heated crucible placed between the patients feet, his body being covered with a shirt only, and in this way a profuse sweat was forced. In case of any tendency to fainting, the patient was provided with a pipe or tube, by which he might inspire fresh air. This process was continued a quarter, a half, or even sometimes a full hour, according to the urgency of the symptoms, and strength of the patient: he was next sweated in a warm bed an hour or two, and was afterwards wiped dry. In this way he was fumigated daily, or every second and third day, according to the urgency of the case, 6, 8, or 9 times, until either a salivation or a flux ensued. Some were so absurd as to forbid any change of linen throughout the whole course of salivation.

FROM the excessive severity of the salivation excited by mercurial unction, and by fumigation, and the painful suffocating regimen, the most fatal consequences ensued, and Mercury from this abuse was reprobated by many even of the faculty. The remedy and regimen was little less dreaded by the afflicted than the disease itself, or even death. A Spaniard therefore, G. F. de Oviedo, determined to embark for Hispaniola, and to learn if the Indians there had stumbled upon any method of cure. Their remedy he found was an aqueous decoction

coction of guiacum, which was given for drink; Oviedo (1517) returned back to Spain with this secret, commenced Pox doctor, and in that trade acquired a large fortune. The European custom then was to give first a purgative, the patient was next immured in a close heated room, and twice in the day, at different intervals, he drank about a pint of strong Guiacum decoction made warm, after which he was covered up in a warm bed, and sweated two or three hours: he was next in succession wiped dry, and light nourishment of the vegetable kind, with bread well baked, given: if weak and debilitated, chicken broth, and a little of the flesh was allowed. This process was continued 30 or 40 days, and in that interval a purgative was two or three times given. The weak decoction of Guiacum was his common drink, and towards the end of the disease more nourishing food was prescribed. Numbers of tender or diseased constitutions sunk under this rigid discipline, or recovered with broken constitutions, and in numerous instances Guiacum failed to effect a cure: men of the highest rank perished in misery under the corroding ulcers, after being drenched with decoctions, and sweated to skeletons. The Sassafras and Sarsaparilla were soon after imported from America, and their decoction extolled in the cure of the venereal disease.

IN the mode of cure by fumigation, many suffered dreadful inflammations of the eyes, others had their gums loosened so that the teeth fell out; the metallic fumes were highly noxious to the
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brain and nerves, and to diseased lungs; the cure after all was found full as tedious and much more uncertain than that by unction. Fumigations from long fatal experience were at length reserved solely for obstinate or desperate cases, that is, when the erosion was so great as to threaten the immediate decadency of any material part, the palate, uvula, or penis, fumigations conducted through a tube to the ulcers were sometimes found speedy remedies. I. de Vigo (1514) had recommended the red mercurial precipitate as a powerful application to venereal ulcers.

A GONORRHOEA or simple Clap, which commonly manifests itself a few days after infection by heat of urine and discharge of mucus from the urethra, is not mentioned as a venereal symptom until 30 or 40 years after the introduction of the pox into Europe. If no omission has been made in the different descriptions, this is extremely singular. We are equally embarrassed to account for the first rudiments of the disease at Hispaniola. Some Authors report, that the infection was not confined to Hispaniola alone, but prevailed also in Peru, when conquered by Spain. At present all the symptoms of the Venereal Disease are of a less virulent nature, which we might reasonably conclude would be the natural consequence of the cure being now so well known.

A GENERAL exchange of diseases and remedies soon ensued between Europe, and the new discovered continent of America. In return for the
venereal

venereal infection, the Europeans *first* communicated to the American Indians that dreadful scourge of the human race, Small-pox: there it raged with greater mortality than in any part of Europe, and at different periods committed such inexpressible carnage as had nigh depopulated that continent. In 1520 the contagion was imported into Mexico by a negro slave of Spain, when half of those infected died of the distemper: in 1588 it was carried into Peru, and still later into Paraguay, where the Small-pox are said to have proved more fatal than in any other part of the world, hardly any recovering from the disease. With the poison of the Small-pox we gave in recompence to America some inestimable presents. The sugar cane, all the domestic animals which feed, cloath and labour for man, the ox, the sheep, and the horse were transported from the old world to the other side of the Atlantic. We first taught them the use of iron, without which metal, agriculture cannot be properly carried on, forests cut down, morasses drained, ground tilled, nor almost any of the useful arts and manufactories advanced to perfection.

In consequence of the first long sea voyages, a constant diet of salted meat, and other gross food, together with the want of fresh vegetables, the Scurvy, a disease very little known, seldom even glanced at by the ancient writers, and then in very obscure terms, made severe havock amongst seamen. Vasco de Gama and Magellan, lost the
greatest

greatest part of their crews by the Scurvy, and from their journals we became furnished with the first history of this sea tyrant. Numbers of succeeding navigators were equally unfortunate, until the true cause and cure were discovered. The ancient mariners, who had only stars to direct their course, who were ignorant of the loadstone, and other modern improvements in navigation, and who rarely ventured to any considerable distance from lands or capes, were not, so far as can be gathered from history, or the chronicles of medicine, afflicted with this disease. Hippocrates has been thought by some to include the Scurvy under the title of large Spleen, which he imputed to drinking stagnating unwholesome waters: he represents the disease as attended with tumefied and putrid gums, stinking breath, unwholesome colour of the countenance, and ulcers in the legs. A similar disease is described by Cœlius Aurelianus, and by the Arabian Physicians, which they all rank under the term *Lienosi*, and ascribe to a disease of that organ. It is recorded by Pliny, that part of a Roman army when encamped on the banks of the Rhine, had putrid gums, and foul breath, their teeth were loosened, and fell out; all genuine characteristic signs of Scurvy.

I BELIEVE that in the southern climates of Greece, Rome, Arabia, and Persia the Scurvy was very rare, and from that cause probably arises the silence of their physicians. Not that it is impossible for the disease to be generated in warm latitudes,

tudes, even on land; we know a few instances in modern times, where some parts of Italy have been severely annoyed by it; and the exciting causes can be traced to particular diet, a cold season and moisture: at sea it is very frequent amongst naval squadrons in the tropical regions. The late surrender of Minorca, from this disease amongst our troops, is fresh in every one's memory. Land scurvy is mentioned by some German writers so early as 1500, and in the course of that century is described by many medical authors of the continent as infesting the Baltic Coast, and all the northern parts of Europe, especially in the neighbourhood of morasses, or near the sea coast.

THE Scurvy is well delineated by a northern Historian Olaus Magnus in 1555: near the same time Ecthius, Rousseus and Wierus recommended the vegetable antiscorbutics, and sweating once daily to be the best means of cure. It was then, as at this day, distinguished by lassitude of the body, aversion to motion, putrid, spongy, and ulcerated gums, offensive breath, fallow complexion, swelled legs; and by degrees ulcers, black or bruised blotches in the skin; in the more inveterate stages, rigid tendons at the hams, &c. Eugalenus, a German writer, in the beginning of the following century, imagined the Scurvy to be intermixed in many diseases, and multiplies the symptoms beyond all bounds of propriety. Sydenham says, that in his days the two great subterfuges of physicians were malignity and scurvy, which they blended amongst all disorders. In the present century, a

correct portrait is drawn of the scurvy, by Backstrom and Kramer of Germany : from the last author's narrative, the imperial troops suffered prodigious loss in Hungary by this disease ; fresh vegetables could not be procured, and all the drugs of the shops were tried to no purpose. In Germany, several armies and besieged garrisons, where fresh vegetables were intercluded, have at different times been destroyed by scurvy. In Holland too, among the lower class especially, it was formerly a universal epidemic distemper, owing to their salted and gross diet, foul stagnant waters, foggy climate, and marshy soil. Throughout all the northern kingdoms of the continent, particularly in the winter season, and in Holland, amongst those who dwelt in morasses, or near the sea coast, Scurvy in the two preceding centuries made cruel ravages. Numbers of the new emigrants to the North American colonies, and to Newfoundland, were destroyed by the Scurvy. The North Americans were at length taught by the Baltickers and Swedes the sovereign benefit of drinking a fermented liquor of fir tops, melasses and water, and called by them spruce beer : this was found an excellent substitute for the want of fresh vegetables. The industrious Dutch made drains and canals to carry off water, and trusted the rest of the cure or prevention to pickled cabbages or sour crout. In some Northern kingdoms of the Continent, an acidulated bread, and a sour drink used by the Russians, powerfully resist the Scurvy. In Anson's voyage, made in the present century round the globe, the Scurvy appeared

peared in the most virulent stages; the powerful and speedy effects of lemons, oranges, and of various fresh fruits and vegetables, were there likewise manifested in a surprising degree. Physicians availing themselves of all the information registered in different sieges and disastrous voyages, and in countries where the Scurvy is Epidemic, the causes and cure of this disease are now known with the most unerring certainty.

ANOTHER new disease, called the English or Sweating Sickness, first broke out in 1483 or 85, in the army of Harry the Seventh, on his return from an expedition against France, to the port of Milford in Wales. In the space of sixty years, it returned again at five different intervals, and always in summer; but happily, in the course of a single month, its devastation was considerably abated. A similar disease raged in some parts of the Continent, from whence, probably, the infection was imported into England. In 1529, for the first and last time, it harrassed Holland and Germany, and multitudes were destroyed. In 1713, it returned back to England from the Continent, but raged here a short time only, and has never since been heard of in this Island, nor so far as I know in Europe. At the first attack many thousands in London were snatched off in three hours sickness; but experience taught them, that lying in a warm bed, close covered up from the external air, continuing uninterrupted sweats for twenty-four hours, and avoiding with the utmost

most care all cold, or stoppage of the skin, the sick, by these simple precautions, generally recovered.

THE success of sweating, and the danger of catching cold in this disease, probably, was one motive in influencing Physicians, who reasoned from distant analogy, to prescribe warm rooms and a fiery sweating regimen in the Small-pox. An idea too drawn from Chymistry, a science then growing into repute, especially in Germany, of a process taking place in the blood, similar to the fermentation and despumation of liquors, contributed, I suspect, to rivet the Medical faculty in this pernicious practice. Thousands continued to be sweated, suffocated, and stewed to death in their own poisonous effluvia, until at length Sydenham, in the 17th Century, stretched out his hands, to succour the cause of humanity. It is clear, the modern Physicians could not adopt this fiery practice from the Arabians, who directed the most refrigerating and opposite regimen in the Small-pox.

ABOUT the commencement of the 16th century, an institution at that time extremely conducive to the improvement of the Medical science in this island, I mean the College of Physicians in London, was established by Royal Charter. Linacre, an intimate friend of Erasmus of Rotterdam, a man of classical literature, and physician to Henry the Seventh and Eighth, by his interest with Cardinal Wolsey, the first minister,

obtained the royal assent to this select medical incorporation. Physicians, after a regular course of Medical studies, and being dignified with a Doctorial diploma at some university, were, previous to admission into this society, to undergo another examination, and were afterwards authorised to practise within the City of London, and seven miles around it. The College had also authority to inspect Apothecaries shops, to enquire into the quality and composition of their drugs, and to punish frauds. To them likewise was committed the regulation of the Pharmacopæias, those public and printed registers of drugs, their compositions and preparations. A late Act of Parliament gives the College the additional privilege of licensing, and taking under their jurisdiction, the receptacles of insane persons, or mad-houses. Before the establishment of a medical College, the Bishop of London and the Dean of St. Paul's, possessed the privilege of vending licenses or diplomas to the laity, clergy and empiricks, to exercise the profession of Physick and Surgery within the city and suburbs, and the Bishops of different dioceses over the kingdom possessed, or, at least, usurped a similar power.

By some monkish abuse of the above medical institution, the honours and privileges of the London College are monopolized by a very small club of Physicians, calling themselves *Fellows*, whose only merit, or pretensions to superiority, consists in having studied Medicine at Oxford or Cambridge. I will not, with

with Dr. Mandeville, say, that a Man may as well learn to be a Turkey merchant, as to be a Physician, at either of the English universities. I see no reason why, under new and proper regulations, Medicine might not be as well taught there as at Leyden or Edinburgh; but that has not hitherto been the case. On the other hand, I can see no plausible nor public pretence for excluding those who have really studied Medicine as many years, at other universities, as any of the Fellows of the College, from an equal participation, after the usual examination, of all the privileges of the latter. Instead of this, what is called a *Licentiate* of the London College of Physicians, (and there are some of that description now alive, who were, probably, born at the beginning of the present century) after examination and approbation by a few of the Fellows, pays down fifty pounds, in return for which, he receives a scrap of parchment, authorising him to practise Medicine in London and its suburbs, but is admitted to no other privilege whatsoever of the College: nor can I discover, with what right or propriety a mere Licentiate assumes to himself the empty title of *Member* of the College of Physicians, within whose walls, after examination, he is never allowed to enter. In fact, were the College to insist upon the right of examining every Physician, who practises in London, they must either examine him as a Fellow, or be silent.

LINACRE was the first founder of two medical chairs at Oxford and Cambridge, where annual lectures were ordained to be read on Hippocrates and Galen. From this era, Medicine, in Britain, begins to assume regularity in the form of its studies, and to be placed upon a more respectable footing : but it was not until two centuries later that an anatomical theatre was erected at Oxford. In the reigns of Harry the eighth, and the short minority of his son Edward the sixth, the first Hospitals for sick and mad patients, Bartholomew's and Bethlem, were erected in London. Medical Lectures began first to be read at Leyden in the 17th century. Edinburgh did not begin before the present Century to teach Medicine.

SURGERY, at the beginning of the 16th Century, was held in contempt in this Island, and was practised indiscriminately by Barbers, Farriers, and Swine-gelders : the Barbers and Surgeons Company continued for two hundred years after, both in London and Paris, to be incorporated. In Holland, and some parts of Germany, even at this day, barbers exercise the razor and lancet alternately. The Surgeons Company in London have now disengaged themselves from the dishonourable connection, which levelled them with the profession of a barber : they are now likewise authorised to examine, and to grant certificates to young Surgeons, which qualify them to purchase, or to be appointed to, a medical commission in the army or navy. Frédéric Hoffman, a celebrated Ger-

man physician, who wrote in the beginning of the present century, in his "*Medicus Politicus*," gravely inculcates this caution, "*Medicus nimiam familiaritatem cum Chirurgo non ineat*," and Stahl, his colleague, says, "*officium medici requirit ut ne chirurgis multo vero minus tonsoribus internus mercurialium usus pro excitando salivatione unquam permittatur*." If such interdictions prevailed in England, the majority of our Surgeons would soon become bankrupts. Some allowances must be made for the stiff formality, and ridiculous vanity of German etiquette, which appears to have infected even Hoffman. Britain, to its honour, has taken the lead of every European nation, in this and many other instances, and has broke the manacles of absurd custom and blind prejudice: the sciences and useful arts, and amongst these, Surgery, here flourish under the benign shadow of opulence and commerce; philosophy is neither debased by superstition nor by aristocratic pride, nor genius doomed to languish, by being excluded from emulation and liberal encouragement. Besides, as medicine, as conducted with us, the injunctions of Stahl are totally inapplicable. In our army and navy, and throughout this Island, the same person commonly officiates as Physician, Surgeon, and Apothecary. Truth requires me to add, that the medical establishment, both military and civil, in this kingdom, calls loudly for Parliamentary investigation: from that body alone the cure can be adminis-

tered. To enter into particular proofs of this assertion, would lead me into too wide a digression from the historical path.

A NEW invention at the revival of literature, the art of engraving pictures on copper-plates, for which we are indebted to Italy, contributed essentially to the advancement of anatomy, natural history, surgery, and of the various arts and sciences. By this medium, a stronger representation of different objects was fixed in the memory, than could be acquired from any description however correct, but unassisted with plates, and the expence was moderate.

In sketching out the medical and surgical discoveries of the *last three hundred years*, and of natural philosophy, so far as it is connected with medicine, I shall follow the natural order and distribution of the different subjects, rather than adhere to a strict chronological detail of names and writers. I begin, for example, with one branch of medicine, anatomy and physiology, or any other, and pursue it as closely, and with as few divisions as possible, in regular progression through three centuries. He who would undertake to execute this arduous task compleat, to relate minutely the infinite variety of medical and philosophical writings in this interval, and to dwell, with critical precision, upon the faults and perfections of each author, must expect to fill many folio volumes : the undertaking would be sufficient to exercise the talents and industry of the greatest genius, during

during a long life; the Author should likewise be possessed of subtile discernment and boundless erudition. In the short, and, I acknowledge, the superficial compendium here exhibited, I have attended more to important discoveries and improvements in medicine, than to a detail of clashing conceits, and a large vocabulary of proper names. Those who wish to be introduced to a universal library of medical and surgical books within the above period, will find an ample magazine in Vander Linden and Merklin, and above all in Haller's collection, the title of which is, "Haller's Boerhaave's methodus discendi artem medicam:" they have also pointed out the best editions of the different Authors, which is an important index to purchasers. Haller truly observes, that the periodical diaries and criticisms upon the different books and pamphlets, published on the arts and sciences in the present century alone, are almost infinite. Such are the Literary Journal of Italy; the Bibliotheque Raisonne of France; the Reviews of Liepsic and London, &c. which now are accumulated to many hundred volumes. What must be the magnitude of the originals when a few extracts and criticisms are swelled to so huge a size? Those who are acquainted with the manufactory of such anonymous criticisms, will think it prudent very frequently to distrust their panegyric and their censure. Amongst this literary host, there are some excellent masters, many are fallen into disgrace, and by far the greatest num-

ber went off the scene like spectres; they were either abortions, or chryfoms that perished in the birth, or in the first month.

ANATOMY AND PHYSIOLOGY.

BY tracing the most important and useful discoveries, not only in Anatomy, but in all the other branches of Medicine, we shall see what the ancients had left undone in this Science, and where the moderns have supplied their defects, or corrected their errors. To have transcribed all the ancient Anatomy and Physiology, would have filled several volumes, and few readers, I presume, will regret the omission.

HUMAN Anatomy, which had originally grown up, and had died away at Alexandria, began first to be revived by the modern Italians and Sicilians. So early as 1151, Anatomy was taught at Bononia, in Italy: a law was also made in Sicily, by Frederick the II^d, ordaining that no one should practise Surgery, without previous instructions in Anatomy. Jacobus Carpus, formerly mentioned amongst the writers on the Venereal Disease, had dissected one hundred dead bodies. It is, however, from the epoch of A. Vesalius, (1539) a Physician of Brussels, in Flanders, and cotemporary with Charles the Vth, that we must date the ^{begin}gin of modern discoveries in Anatomy. I know of no original discovery in this science, either in England, France, or Germany, before the beginning

ning of the 17th Century. Mundinus and Benedictus, who reigned in the 14th and 15th centuries, as text-books in most of the Italian schools, had not soared beyond the rank of translators and commentators.

THE fame of this modern Herophilus early procured him an invitation from Italy, to fill the public anatomical chair. There Vesalius's acute criticisms and detection of Galen's errors, raised him many enemies amongst the implicit bigots to that ancient oracle, whom they had been taught to revere as infallible. Vesalius's chart of the human structure, his description and plates of the bones, muscles, and blood-vessels, leave all the ancient treatises on this subject at a great distance.

G. FALLOPIUS (1555) a pupil of Vesalius, is generally, but erroneously, called the first discoverer of those two tubes depending from the womb, and named after him, the Fallopian tubes. The original merit, however, is due to Herophilus. We have learned that, like the horns of a snail, they have the power of erecting themselves when conception takes place, and to embrace the Ovaria, placed likewise on each side of the abdomen, from whence they convey the impregnated ovum into the womb. The revival of this discovery gave a new turn to the systems of generation broached by Hippocrates, Aristotle and Galen. Fallopius first began to unravel the internal structure of the ear: the ancient anatomists had gone very little beyond the tympanum or drum, and the interior parts of this rocky cavity were unexplored. He corrected several errors
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of his master, and described several muscles before unobserved, particularly about the head, throat and palate.

B. EUSRACHIUS, who lived at Rome towards the close of the same century, from the number of his discoveries and improvements, deserves to be called the Prince of Anatomists. He explored the internal parts of the ear, and the structure of the teeth with conspicuous industry: he dissected the eye minutely, and discovered several muscles in the face, eye, ear, throat, back, and genitals, overlooked by Vesalius. He described the ten pair of nerves that are sent out from the brain through different apertures of the skull, and traced with uncommon labour and acuteness the whole intricate course of the abdominal nerves. He discovered the thoracic duct, but was ignorant of its origin. His description and plates of the kidneys, and ureters, and of the female organs of generation, are extremely accurate. Above all, his plates or general system of the blood-vessels and nerves, branched over the whole body with the muscles in their natural situation, are the admiration of posterity, and are copied by many succeeding Anatomists: with Albinus's explanation they are most perfect. By some accident they lay buried upwards of a century after the Author's death.

FABRICIUS ab Aquapendente, together with J. Sylvius, discovered the valves or flood-gates in the veins, which prevent the blood from regurgitating backwards; muscular motion must press it forwards to the heart. Their use was better understood through the late discoveries of Harvey.

Harvey. In explaining the structure of the muscles, Aquapendente refuted several errors of his predecessors. Besides an excellent surgical system, he wrote on the abdominal viscera, the stomach and intestines, and on the incubated egg and generation.

F. PLATER discovered the true use of the Crystalline Lens, and that this humour served merely as a convex lens, to vision.

SANCTORIUS (1614) in Italy, ascertained by weights and scales the daily quantity of nourishment and fluids consumed by himself, and the proportion which was carried off by the different excretories or outlets of the body. The ancient Physicians were not ignorant of the cuticular perspiration, but the quantity had never before this Author been determined by the balance. Sanctorius proved, that the cuticular discharge and insensible transpiration by the pores of the skin was greater than any other evacuation of the body; that in him at least, it was even equal to half the food and drink consumed. He examined the effects of cold, heat, seasons, different foods and drink, passions of mind, sleep, waking, and of all the nonnaturals in increasing or diminishing this cuticular exhalation. He proved also that the skin, on certain occasions, inhales moisture from the atmosphere, and that the body by this means is sometimes increased in weight. In those inestimable experiments, Sanctorius continued with rigid perseverance during thirty years, and has very wisely condensed the general result into a small
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volume of Aphorisms. Different seasons, climates, modes of diet and life, and the variety of human constitutions, will render Sanctorius's rules or aphorisms not universally applicable, nor free from exceptions. He makes the proportion of perspiration too great, and assigns to the nocturnal too large a share: later experiments which I shall relate, have amended several of Sanctorius's errors.

W. HARVEY (1628) in Britain rendered his name immortal by another signal discovery, the circulation of the blood, which engaged numbers of pens in its defence and opposition: amongst his opponents we find the names of some eminent Anatomists, who actuated by envy wished to rob him of the merit of this discovery. Harvey established, by incontrovertible experiments, the circulation of the blood through the body, and the incessant rotatory motion of the whole crimson torrent by the heart, arteries and veins, so as to make many compleat circuits round the body, in the space of twenty hours. The lesser circulation through the lungs had been mentioned by Galen, and by two of the moderns, Servetus and Cæsalpinus, an Italian botanist; it remained for Harvey to put the finishing hand to this glorious discovery, and to extricate this most essential part of the human physiology from obscurity. Harvey also wrote an incomparable treatise on the incubated egg, and the daily charges which the chick undergoes until it deserts the shell: by watching its gradual growth from the embryo state until it bursts from

from its prison, light was reflected upon the generation of the nobler animals. In order to assist in developing the intricate process of generation, Harvey was supplied, by Charles the First, with deers, which were opened and examined at different intervals after conception. Comparative Anatomy, although we regret the cruelty that it has occasioned, has contributed to resolve many intricate questions of the human physiology.

C. ASELIUS (1626) had discovered the lacteal vessels running through the mesentery: Galen took them for white arteries: Aselius imagined that they terminated in the liver. Pecquet, soon after, discovered the receptacle of the chyle and course of the thoracic duct to its termination in a blood vessel near the heart: from this last discovery, the ancient and common erroneous notions of the chyle, or prepared nutriment, being first carried into the liver for concoction into blood, were subverted.

J. RIOLAN of Paris, and a cotemporary with Harvey, is justly ranked amongst the eminent Anatomists; and as a proof that the superstitious horror, which prevailed in ancient times, was no longer a clog upon medical improvements, this author boasts of his having dissected one hundred and fifty dead bodies. It is very little to Riolan's credit to have strenuously inveighed against every cotemporary candidate, and discoverer in anatomy; he wrote both against Harvey and Pecquet, but thought proper afterwards to acknowledge his errors. Riolan wrote upon various subjects of anatomy:

anatomy: he gave new names to many of the muscles, which at the same time explained their insertion at each extremity, and conveyed an idea of their function and use: as a muscular nomenclator, he is copied by succeeding writers.

FROM the beginning to the termination of the preceding, or 17th century, many other discoveries were added to anatomy by writers of this nation, and of different nations of the continent. Their names may serve in general as a tolerable sure index of the country of each writer: Sneider described that membranous web, which takes its name from him; it lines the nose, palate, and esophagus, and is filled with small glands, which secrete a slimy liquor: from this, and not from the brain, he observed that the catarrhal discharge was made. Wharton wrote on the structure of the glands, the testicles and seminal vessels, and discovered the inferior salivary ducts. Steno wrote on the superior salivary ducts, and on those ducts leading into the palate, nose, and eyes; on the mucus glands of the nose, palate, and tongue, and the sebaceous glands of the skin. Peyer wrote on the glands of the intestines. Lower, Rudbeck, Bartholine and Nuck, discovered many of the lymphatic, serous, or absorbent vessels in the head, breast and belly, and inferior parts; some of them terminating in blood-vessels near the heart, others in the receptacle of the chyle. Bellini proved that there must be absorbent vessels in all parts of the body. Wirfungius discovered the pancreatic duct; and Bruner wrote on the

the uses of this organ. Glisson wrote on the liver, the vena porta, the biliary ducts, and the offices of this organ. Lower wrote on the heart. Willis and Ridley wrote on the brain, and its membranes, and on the origin and distribution of the nerves. R. Vieusen is also an excellent Neurographer. Borelli is a celebrated theoretical writer on muscular motion. Du Verney gave the best description of the organ of hearing. Kerkringius wrote on the osteology, but is excelled by Clopton Havers, who made several discoveries respecting the structure and formation of the bones, the uses of the marrow, periosteum, and of the mucilaginous glands within the joints. F. Hildanus described the manner of preparing dried skeletons; and M. Lysferus the method of dissecting dead bodies.

To the modern microscope and injections of the last century, from the middle principally to its termination, we are greatly indebted for subtle anatomy, more especially of the blood vessels. Malpighi, Van Hoorne, Swammerdam, De Graaf, Leeuwenhoek and Rusch are conspicuous leaders in those minute researches.

M. Malpighi, an Italian, assisted by good microscopes, favoured the world with some admirable treatises on generation, and the gradual evolution of the chick from the incubated egg, with treatises on the brain, the glands of the uterus, the organs of touch and taste, and on the structure and uses of all the internal viscera. On the glands and secretion few writers have excelled him. His studies

dies upon these subjects were so eager and incessant, that his health became impaired, and his life shortened.

R. De Graaf described the generative organs of both sexes: he traced the progress of generation in rabbits, and other small viviparous animals, with astonishing patience, pursuing the little ovum from its earliest rudiments in the ovarium, through the Fallopian tube into the womb. He attempted with Malpighi, Van Hoorne, and indeed with Harvey, to prove that viviparous, equally with oviparous, animals originate from "ova." He is, I believe, one of the first who used quicksilver in minute injections, without which the vessels of the testicles cannot well be filled, and who described the Syphon for injecting the blood-vessels. Swammerdam accuses De Graaf of pilfering many hints from Van Hoorne, a Dutchman, and their common master; the publication of whose discoveries were prevented by an unexpected death.

A. LEEUWENHOEK pretended to discover, by his microscopes, little animals like tad-poles, the rudiments in embryo of the human fetus, swimming in the male semen: the mother, in this case, had nothing more to do than to find a lodgement for the little homuncule. This, for some time, shook all the former systems of generation. Others, however, appealed to microscopical experiments, and denied that there were living animals visible in the male semen. A third party affirmed, that
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the female liquor presents the same appearances. The various disputes respecting generation still remain intricate and unsettled. In these controversies curiosity may be gratified, but wise men will think it prudent to suspend their assent. By his excellent glasses, Leeuwenhoek perceived the extreme termination of capillary arteries into reflecting veins : he affected also to discover a certain number of minute serous globules in the blood, which, when united, compose a red globule.

F. RUSCH, of Germany, learned from Hoorne and Swammerdam many improvements in the art of injection, and of filling the extreme capillary vessels, which would otherwise have remained invisible : he has left several figures of injected preparations, and many originals. In general, his preserved preparations are too detached, and the parts unconnected. His collection of Human fetusses, which demonstrate its gradual size and increase until the 9th month, is much commended by Haller. Rusch is the first who demonstrated valves in the lymphatic or lacteal vessels, similar to those in the red veins. He first explained the true structure of the penis ; the glans he found was only a continuation or appendix of the spongy substance of the urethra : he described the papillæ or little fleshy eminencies of the penis, and the mucous ducts of the urethra. He described the real structure of the skin, and shewed that the epidermis, or outer covering, was continued into the mouth and intestines. He correctly anatomized

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the heart, the bronchial artery of the lungs, and the membranes inclosing the brain.

J. LOCKE is an elevated genius, whose works exalt the close of the last century, and the character of Britain, to the highest pinnacle of literary fame. In his *Essay on the Human Understanding*, he demonstrated the anatomy of the human mind, the nature and extent of words, speech, and language. There we behold the gradual evolution of sense and reason, and all the complicated operations of the rational faculty, distinct as in a mirror. This sublime philosopher has weighed every thought, word and syllable, and has left a lasting example, to all posterity, of the most profound investigations, guided by close reasoning and wary investigation.

To understand the doctrine of physiognomy, and the passions, as expressed in the countenance, attitudes and gestures, Le Brun, and other writers on historical painting, must be consulted.

THE majority of the Authors of the present century, are arranged from the similarity in their writings and discoveries, without attending to the exact chronological order of each publication. This, I conceive, conduces to order and brevity, and gives less fatigue to the memory.

J. KEIL, a celebrated mathematical physiologist, investigated muscular motion, secretion, the quantity and the velocity of the blood in circulation, and the weight with which it is pressed in the lungs: contrary to Sanctorius' Aphorisms,

Keil

Keil found the diurnal, "*reliquis equalibus*," more copious than the nocturnal perspiration, and the urinary more copious than the cuticular discharge; he found also that these excretions were extremely variable in quantity, without any material inconvenience or injury: he confirmed the inhalation of the skin at particular times, and in rainy or moist weather. Later experiments on cuticular exhalation correspond, in several respects, with Keil. Lining, of South Carolina, in N. America, found the perspiration inferior in quantity to the urine in winter, but greater during summer. In A. Kau, there are many excellent observations on the internal and external exhalation and inhalation, and on the perspiration from the lungs. Robinson, of Dublin, found the diurnal superior in quantity to the nocturnal perspiration, and the summer superior to the winter. This author's treatise on the food and discharges of the human body, on the proportions of each excretion, and on the relative proportion of the different parts and organs of the human body, has great merit. Dr. Hales, an English clergyman, made many experiments on horses, dogs, deer, and other brute animals, which are published in his *Vegetable Staticks*: he attempted to measure the force and velocity with which the heart and arteries propelled the blood through the body; to measure the force of the stomach and intestinal canal, the strength of the periosteum and ligaments; and made many experiments to illustrate the functions of respiration. He likewise demonstrated air

to be not only an element of the blood, but of most other bodies, whether fluid or solid.

DOUGLAS, an eminent London anatomist, near the beginning of the present century, demonstrated the true structure of the peritoneum, and the manner in which it inclosed the intestines. He described several muscles in the neck and palate; his universal compendium of the human muscles, their names, insertions and uses, is in the hands of all medical students. D. Le Clerc, near the same period, published an equally celebrated compendium of the human bones or osteology. A. Monro, of Edinburgh, has since nearly perfected the human osteology, and the description of the origin and course of the nerves. Cheselden, the cotemporary of Douglas, had written a system of Anatomy, but a later general system of all the parts and organs of the human body, by Winslow, is in more general estimation, and is a common text-book in many medical schools. In T. B. Morgagni's "*Adversaria Anatomica*," there are a number of solid criticisms on the errors of preceding Authors, and on the minute parts of anatomy. Dodart described the glottis, the functions of the voice, and the manner of speech and singing.

THE study of anatomy is greatly facilitated by correct plates added to the bare verbal description. Eustachius had been the modern Praxitiles of this art. Cowper, of London, a cotemporary with Douglas, published large plates
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of the muscles, and of the blood vessels injected with coloured wax, which are accurately executed: his plates of the muscles are principally copied from Bidloo, a distinguished anatomist of the preceding century: a few additions have been made to them by Cowper. Albinus, the late professor at Leyden, published a general system and plates or figures of the human skeleton and muscles: these whether viewed by the critic eye of an anatomist, or of a painter, display a manifest superiority above all others in correctness and elegance. The plates of the gravid uterus by Dr. Wm. Hunter of London, eclipse every preceding work on that subject.

WITH respect to the proper mode of making preparations and injections, and of dissecting dead bodies, much information may be gleaned from Vesalius, Fallopius, Lyserus, Hildanus, Riolan, Rusch, Cowper, &c. N. Lieuberken, in the Berlin Memoirs, describes the manner of injecting the blood-vessels of any organ, and afterwards of corroding the membranes by vitriolic acid, leaving the vascular form and wax intire. Monro, in the Edinburgh Medical Essays, mentions the composition of different injections used by anatomists for filling the blood-vessels. The moderns were the first inventors and artificers of wax figures, so as to resemble the human body, or particular parts: these are now brought to great perfection, and may yet admit of considerable improvement.

FOR discoveries made in the system of small transparent vessels, called lymphatic or absorbent, which open upon the surface of the skin, and into all the internal cavities, we are greatly indebted to a few modern anatomists: in those minute researches, Haller, Hunter, Hewson, and Monro have particularly distinguished themselves. They are not, what was formerly supposed, the smaller branches of arteries and veins, but a distinct system appropriated to the sole purpose of absorption: those placed in the inferior parts of the body, discharge their fluids into the receptacle of the chyle, and those placed in the superior parts, into the subclavian vein; and consequently from thence into the general circulation.

A. HALLER, who lately died at Bern in Switzerland, should not be mentioned without respect and reverence. He has made a universal collection of preceding anatomical discoveries, and digested them into order: to read over his voluminous anatomical and physiological works, one might almost conclude, that the subjects are exhausted: every part of the human body is surveyed, the different functions explained, the errors of preceding authors rejected, and important additions made by his own indefatigable labours: his description of the blood vessels is unrivalled. Some regular courses of attendance upon anatomical dissections, assisted by the careful perusal of Haller, and a few more of the select authors already mentioned, will make students sufficient masters of this single branch of medicine.

medicine. Haller alone contains the sum of what cannot be learned in multitudes of inferior note, and like a great river or ocean, has ingulphed the tribute of many hundred smaller streams. No man can pretend to a critical knowledge in this science, without having studied Haller. Those teachers of anatomy, who neglect to recommend Haller to their pupils, must either not have perused him, or are fearful, that what they often retail, as their own discoveries, would be found mere plagiarisms from this great man.

PHYSIOLOGY, we may perceive, went hand in hand with anatomy. With the structure of the body, the œconomy of its different functions were at the same time developed; and in the space of the last two hundred and forty years, this science has been farther extended than all the preceding ages of antiquity had been able to carry it. The analysis of the human humours and excretions, and of the bones and fleshy parts, will be found amongst the chymists, from whence they are collected by Haller. In this part of physiology the ancients were extremely deficient, and were constantly bewildered in the primary elements. In fact physiology and pathology, are two inexhaustible themes, which are handled by a variety of sects and miscellaneous writers hereafter to be produced.

CHYMISTRY AND PHYSICKS.

CHYMISTRY, at the beginning of the 16th century, was grown into a favourite study, and a

popular art in medicine. From the days of R. Bacon, three hundred years earlier, they were in pursuit of the philosopher's stone, or of accelerating the coccion of the baser metals into gold, and in pursuit of a universal panacea to prolong life, and cure all diseases. In the course of those ridiculous attempts to make gold, and to arrive at the grand elixir, wherein numbers lost their fortunes and their reason, many unexpected and valuable discoveries were made, not only in medicine, but in a variety of other arts. Bacon, Lord Verulam observes, that the Chinese had long laboured to change the baser metals into silver: quicksilver and lead are both heavier, and he conceived the attempt more likely to succeed, than that of converting the baser metals into gold.

IN the preceding chapter, our account of the origin and progress of medical chymistry, broke off with Basil Valentine. To him succeeded Paracelsus of Switzerland, or as he subscribed himself Aurelius, Philippus, Theophrastus, Paracelsus, Bombast de Hohenhiem. His name and marvellous cures, at the beginning of the 16th century, were celebrated throughout Europe, to many kingdoms of which he had travelled for instruction. He prescribed a medicine of opium and mercury in the leprosy, and foulness of skin, in the venereal disease, in stubborn ulcers, in chronic pains, and even in dropries. In some chronic diseases of the stomach, he gave a preparation of vitriol; copperas I presume was the basis, whose effects

effects are nearly similar to the salt of iron. He extolled antimony to the skies; there was nothing, he said, equal to it in medicine. We know very little more of Paracelsus's chymical nostrums. He wrote a voluminous treatise on wounds, ulcers, the venereal disease, on the theory of medicine, and on several medical subjects. It is, however, extremely difficult, and often impossible to understand, or to make any sense of his mystical and barbarous jargon. The wildest madman in Bedlam could not invent a more ridiculous rhapsody of nonsense and unintelligible phrases, than are contained in the theoretical part of Paracelsus's writings. He is notwithstanding entitled to great praise, by his example and efforts in introducing antimonials and mercurials into internal use. At the age of 47, this drunkard and prince of empiricks resigned his breath, to the disgrace of his boasted aurum potable, azophs, little demons, elixirs, and immortal catholicons.

My intention here is merely to particularize the principal advantages and abuses introduced into medicine alone by chymistry. This science, if we admit some modern definitions, seems unbounded. "The effects of heat and mixture upon all bodies in nature," are infinite and inexhaustible, and there can be no end of distilling, subliming, compounding, decomposing, and a luxuriant train of similar processes practised by the Chymists. Taken in the most extensive sense, it may be connected to almost
every

every art and manufactory, and they may be said to borrow more or less from chymistry.

THE chymical medicines have strengthened the arms of physick, to conquer several fatal diseases which had bid defiance to the weaker weapons of the Greeks, Romans, and Arabians. The ancients were almost ignorant of the medical use and effects of the metals taken internally, they rarely used them but in external applications. Medicine, during the last three centuries, principally, and by the industry and labours of various chymists, obtained from the furnaces, crucibles, and mixtures, the mercurial and antimonial remedies. From antimony principally we received tartar emetic, the crocus, and basis of the antimonial wine, and in the present century the James's powder, all confessedly the most powerful febrifuges with which the world are yet acquainted. From the same semi-metal we received the sulphur auratum antimonii, and the Kermes mineral, a celebrated medicine in the last century: they are now often mixed with calomel, and given as alteratives in cutaneous diseases. In the 16th century, the College of Paris banished antimonials from their pharmacopœias, but one hundred years after becoming wiser, this metal was again restored to favour. From crude mercury and a strong mineral acid were sublimed calomel, corrosive sublimate, and some other preparations of this metal, which in venereal cases, in cutaneous foulness of the skin, in some chronic diseases, and stubborn ulcers, have performed admirable cures. Even

Even from that poisonous metal copper, joined to sal ammoniac, a medicine was extracted, which in a few desperate cases of epilepsy has gained applause. The vitriol of copper joined to tartar emetic has been successfully exhibited in some desperate cases of chronic asthma. From sugar of lead, and vitriol of iron, is prepared the antiphthysical tincture which some have ventured to exhibit in deplorable pulmonary consumptions; but the internal operations of lead are so dangerous as to require the utmost caution and circumspection.

By the chymical art were obtained the mild, purging, and neutral salts, the salt of Glauber, the Sal Catharticus Amarus, the Vitriolated Tartar, and Sal Polychrest; also the efficacious diuretics in dropsies, Sal diureticus and Cremor Tartari. The magnesia, a mild absorbent and purgative, has partly supplanted the testaceous powders in the redundance of acidities, so very prevalent in the stomachs of young infants, and in the heart-burn of adults. The volatile salts are all the productions of chymistry. We are chiefly supplied with the Sal Ammoniac in a crude state from Egypt, where it is said to be sublimed from the soot of cow's-dung: this salt is sometimes joined to the Peruvian bark, and taken internally in obstinate intermittents: its volatile salt, joined to distilled vinegar, forms the Spiritus Mindereri, an efficacious sudorific and diuretick in febrile and inflammatory diseases. Crude sal ammoniac is also used as a discutient and as an antiseptic in some external applications; and its volatilized salt, applied to the olfactory

tory organs, is extremely grateful in some disorders of the head and nerves. From the vitriolic acid and spirits of wine is formed that subtile spirit called Ether, a powerful external application in removing some local pains, and internally a powerful and speedy antispasmodic.

SURGERY, from chymistry, drew two of its best escharoticks or causticks to destroy fungous flesh, and to clean stubborn ulcers. From silver, and a strong mineral acid, they were supplied with the lunar caustic; from mercury and a strong acid, with the red precipitate. From cerus, or white lead and vinegar, Surgeons derived those external applications so celebrated in sprains and external inflammations. Lead is also the basis of a few plasters and ointments. Tutty an impure sublimate of Zinc, and the sublimed flowers of Zinc, are used in ointments, and collyriums to inflamed eyes.

A FEW other medicinal preparations obtained by distillation, shall, perhaps, be mentioned under the head of *Materia Medica* and *Pharmacy*: whether they should be ranged under the *Chymical* or under the *Pharmaceutical* art is of no consequence to the world.

TOGETHER with the above powerful remedies, some flagrant abuses were obtruded into medicine by the Chymists. The strong mercurial preparations having effected extraordinary cures in deplorable stages of the venereal disease, in leprosy, foulness of the skin, and obstinate ulcers, where all the ancient remedies had proved unsuccessful

Chymistry,

Chymistry, from these few fortunate events, and from fortuitous and useful discoveries relative to several other arts, came to be held in the highest veneration, and its professors puffed up with vanity and arrogance. They represented the signs, causes, and prognosticks of diseases, diet, regimen, in a word, all the united labours and medicines of the ancients as useless lumber. They boasted not only to accomplish the transmutation of metals, but that with one sovereign remedy they could eradicate all diseases, and by the help of a few vials of the universal elixir, they did not despair to exceed the antediluvian race in longevity, and to render man immortal. In vain promises of prodigious cures, and in lying, the Chymists were not outdone by the Astrologers. Their medicines were so rough and violent, and administered at hazard in all cases without due discrimination, that numbers by their own confession fell victims to this criminal rashness. In the 17th century, chymistry was grafted into the theory of medicine, and greatly influenced the practice. The different fluids, excretions, and solids of the human body were analyzed and tortured by fire, and all the heterogeneous elements, separated by such unnatural violence, were resorted to in resolving the proximate causes of diseases.

CHYMISTRY, in the 17th and in the present century, has been cultivated by men of transcendent genius and abilities, and intermixed with the progress of physicks or natural philosophy: under those joint heads I shall now embrace both subjects.

Until

Until this era Chymistry was an occult and mysterious science, and its experiments and secrets were carefully concealed under a jargon of turgid bombast, and dark alchymistical phrases.

TOWARDS the termination of the 16th century, F. Bacon, Lord Verulam, Chancellor of England under James the First, laid the foundations of natural philosophy: before his days it was very little understood. The schools and great part of Europe, were still engaged in platonic and in scholastic subtilities, and were grown old in idle controversies. The ancient philosophy, this great man, whose name alone adorns the 16th century, considered as a castle built in the air: he advised mankind to study nature upon an entire new plan, to begin by experiments, to clear away the filth and rubbish, to erect systems upon solid foundations, and by slow gradations to ascend in knowledge. Bacon made numerous experiments on the winds, on light, sound, vegetation, agriculture, and upon almost every interesting subject in physics. He wrote a short history of life and death, and of the comparative longevity of man and other animals. He described the method of changing salt water into fresh, either by distillation, or by percolation into a pit dug near to the high water mark of the tide. He mentions the mode of preserving vegetables and fruits fresh for a long time, by inclosing them in jars or bottles close stopped; and those buried in the earth or suspended in a deep well, contributed to their longer preservation.

tion. To mariners, and the inhabitants of the frozen northern regions, both these discoveries are of great utility. He first suggested an idea of the thermometer, and recommended spirits of wine as preferable to water. He first gave tables of specific gravities, and threw out a variety of hints relating to gravity and attraction, which opened the road for Newton. He assigned the true causes of the jail fever, which in his days was ascribed to witchcraft. The causes which he assigns for putrefaction, and the means of confining the vital spirit, are curious and profound reflections. His "Novum Organum : de Augmento Scientiarum : and Nova Atlantis, or plan of a new Academy to improve Experimental Philosophy," are incomparable works. This is confessedly one of the greatest philosophical geniusses that ever existed. (I do not speak of his political character, which was mean and contemptible) His vast comprehensive mind embraced all nature, and in his works may be found the original seeds of many of the grandest discoveries since made in philosophy ; and several, I suspect, yet lie concealed in Bacon. The ancient philosophers, like modern novellists, had given full scope to their imagination ; their systems were erected by fancy, and gilded over with a profusion of rhetorick : after pursuing false tracts for so many ages, Bacon at length directed philosophers into the right path.

G. GALILÆO, an Italian, almost the cotemporary of Bacon, and a much greater astronomer and mathematician,

thematician, first began to ascertain the weight of the atmosphere: he asserted the motion of the earth, and guessed at its real figure. In Poland, Copernicus discovered the true planetary system: he taught that the sun was fixed in the center, and that the earth and planets revolved round this luminary. The ancient astronomical system of Ptolemy and the Greeks was exceedingly confused. They imagined that the sun and planets were carried in 24 hours round the earth; they did not then conceive any revolution in our globe. Toricelli, the scholar of Galilæo, determined still more exactly than his master, the weight of the air: he invented the barometer, by which we can measure the smallest variations in the gravity of the atmosphere. Toricelli wrote not only on pneumatics, but likewise on hydraulicks, or the laws of fluids flowing through pipes and canals: on the latter subject he was followed by Castelli.

R. BOYLE, descended from a noble family in Ireland, endeavoured near a century after to finish what Bacon and Galilæo had began. Boyle made great additions to Toricelli's experiments with the air pump, and in ascertaining the precise weight of the atmosphere: he first remarked a new property in this element, its spring and elasticity, its rarefaction and condensation. He suggested several ingenious reflections on respiration: he supposed that some latent and subtile quality or principle, not then discovered, was conveyed in the air, which enabled it to support life in man and other animals,
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and to feed flame: he observed that factitious air, emitted from substances during fermentation and putrefaction, possessed qualities deleterious to animals. He began a natural history of mineral medicated waters, and treats of various important subjects in medicine: in particular he analyzed the blood very accurately into its elementary principles. He wrote on the porosity of animals, and of inanimate solid substances. No part almost of chymistry has been left untouched by Boyle, and in this class of philosophers he holds a distinguished rank. He remarks, that the different parts of substances, separated by fire, will not, when collected, re-produce the original; and consequently that the action of strong heat often forms combinations and separations different from the natural elementary principles. Boyle, and Wallis the great mathematician his cotemporary, both wrote on hydrostatics, or the weight, pressure, and other properties of fluids.

FROM the preceding philosophers we drew the first principles of hydraulicks, and of pneumatics. The perpendicular height of the atmosphere is known to be about forty-five English miles, and its gravity or pressure upon a man's body of a middle stature, about 32 or 33 thousand pounds. At the top and at the bottom of mountains, and in rainy or fair weather, there is a prodigious variation in its pressure, without producing any material inconvenience or injury. Stupendous effects are now produced by that modern detected quality of the air, its spring and elasticity. The simple gravity of the atmosphere

cannot raise quicksilver above 29 or 30 inches perpendicular height in a tube, nor water above 32 or 33 perpendicular feet above the level; common pumps therefore, depending upon the natural pressure of that element, were confined in their operation. To give effectual energy to several useful machines, we now employ the elastic springiness of confined and compressed air. Upon this principle are invented engines to raise water from vallies to the tops of hills, forcing pumps, steam engines to empty water from mines and coal pits, or to supply the consumption of cities, and fire engines to stop the progress of flames.

To BOYLE succeeded several excellent Chymists; some of them were his cotemporaries: amongst the principal are J. B. Helmont, Stahl, Homberg, and Geoffroy. Helmont proved, that the bile is not an excrementitious liquor, but of singular use in digestion: he made innumerable experiments upon human urine, and that of brutes, with a view to investigate the origin of the stone, and calculous disorders. Bellini also accurately analyzed the urine. Chymistry assists us to analyze mineral waters, and to detect their different impregnations: I shall hereafter point out the principal keys to this knowledge.

BRITAIN, a country fruitful in philosophers, at the beginning of the present century, produced one man whose discoveries alone would have immortalized any nation. Under the penetrating genius of the great Sir Isaac Newton, philosophy
seems

seems to be almost exhausted. He demonstrated the theory and laws of light, of seven primordial rays or colours, and of vision: Galen's physiology of vision was grossly erroneous. Newton explained the theory and propagation of sounds; the true shape and figure of the earth, the laws of gravitation and attraction, the doctrine of the central forces, the causes which direct and retain all the planets revolving in their orbits: he explained the cause of the tides of the ocean: he calculated the exact distance of the planets from the sun, and the quantity of matter which that immense globe of fire and several of the planets contained; he threw out various reflections respecting comets: he invented the fluxionary calculation, and the reflecting telescope: he measured the motion and retardation of solid bodies moving through fluids, and the proportion of the resistance to the velocity. Philosophy, mathematics, astronomy, and science in general were illuminated, by him, with an infinite fund of new and profound observations. All Europe beheld this luminary of philosophy, as an orb of superior lustre, with reverence and admiration. Newton unfolded the order and springs of the universe, the great system of the world, and the planets, and several of the most majestic secrets in the machinery of the creation. Leibnitz, of Germany, the great mathematical genius, the celebrated Locke, and Hugen, who first explained the theory of pendulums, were all Newton's cotemporaries.

ELECTRICAL fire is a new discovered element, a powerful agent in the machinery of nature, and the phœnomena are probably yet in their infancy. The ancient Greeks and Romans gazed with stupid awe at thunder storms, and looked with religious horror upon places struck by lightning. Until the present century, the nature and powers of the electric fluid were almost unknown. Very little more had been discovered, than that amber, wax, or glass, when dry and rubbed with a warm hand, would attract and repel down or feathers. Newton seems to have been one of the first who disclosed a part of the real qualities, nature, and extensive energy of the electric fluid : afterwards in the French Memoirs, and in the Philosophical Transactions, some papers were published on this subject ; but the amazing powers, properties, and universality of this subtle ether have been brought to light by the ingenious experiments and electrical apparatus of some modern philosophers, and amongst the principal, Dr. Franklin, of North America. To him we are indebted for the invention of conductors, or iron rods, slender at the point, and of sufficient length to project somewhat above the top of any building, and to reach to the bottom, plunging some feet into the earth. During thunder storms, the electric fluid is carried down the surface of the rod into the ground, and the inhabitants within are in no danger. By this simple apparatus, combustible magazines and grand monuments of architecture rest in perfect security from the celestial

celestial artillery. Dr. Priestly has collected into a quarto volume, the progressive and most essential discoveries made in this science. Some new electrical experiments have lately been published by a learned Nobleman, Lord Mahon. On the medical efficacy of electricity, we have a treatise in Italian, by J. J. Verotti. De Haen, of Vienna, has published some papers on this subject; and lately, T. Cavallo has collected a small volume on medical Electricity.

ELECTRICAL shocks and sparks directed against, or drawn from the affected part, have been found of considerable efficacy in palsies, in chronic rheumatisms, in sprains, in discussing hard tumours, in convulsive diseases, and local spasms, in contraction of the muscles, in tooth aches, and in female obstructions. A late publication by Mr. Birch, a Surgeon, recommends, from several successful experiments, the electric shock in the latter disease, and in the chlorosis to be conveyed as near as possible to the uterus. This is done by two metal rods or directors carried down from the electric machine; the point of one is placed in contact with the "Os Sacrum," or lower part of the spine, the point of the other in direct opposition, and at the fore part of the pubis between the groins. In this way a *gentle* concussion only is to be transmitted to the uterus, and across the lower abdominal region. A late experimental philosopher, whose writings are well known to the literary world, assured me, that in two cases of external inflammation, he drew electric sparks from the part, by which means in-

stantaneous ease was given, and a sudden cure performed. It would seem therefore to merit a trial in cases of external and internal inflammation.

FIXED, and atmospherical air has been a leading subject of enquiry during the last forty years, amongst a few philosophers and chymists. Hales, Black, and Priestly have excelled in these investigations. Hales, in his *Vegetable Staticks*, had demonstrated air to be an element in the blood, and in many other fluid and solid substances. Black pursuing the same path, found that the absence or expulsion of this subtile element rendered lime caustic; and that a similar principle or vapour was emitted from charcoal, and from fermenting liquors; that it differed from another elementary principle, called "phlogiston," a new element, and a term in metallurgy, first introduced by Stahl, in the following circumstances: substances, when deprived of their fixed air, become lighter; on the contrary, when the subtile "aura," or phlogiston is detached from metals, they acquire an additional weight; this is evident in the calcination of lead, which increases remarkably in the balance after the expulsion of its phlogiston.

CONCISE tables of elective attractions, explaining the affinity and relative attraction of various solids and fluids to each other, are now inserted in most modern chymical systems; these serve to guard against decomposition in the mixture of several ingredients together: they abridge the labour of decomposition, and teach us to expect the certain result

sult from mixtures of different compounds. Mr. Geoffroy is the first who reduced these affinities of different bodies into order, and ranged them in separate columns in a table, with characters expressive of each agent, whether fluid or solid; and in such a table will be seen all the fundamental affinities between bodies, collected into one point of view. To sum up in as few words as possible the immense extent of this science: the principal objects of chymistry are to analyze or resolve, by various processes, all mineral, metallic, vegetable and animal substances whatsoever, into their elementary principles, and to form new compound mixtures which never existed in nature. The elementary treatises on this art also describe the furnaces, vessels, and crucibles of chymistry, and the manner of conducting the various processes.

EXCLUSIVE of the chymical and philosophical publications already mentioned, some general systems and compendiums of each science, or abstract of the whole art, have been published in the present century. Boerhaave's Chymistry is equal to any part of his works. Macqueer's Elements of Chymistry is a common compendium and text book in some universities. C. Newman's, of Berlin, chymical works are well adapted to medical uses. On Physicks, or Natural philosophy, we have elementary compendiums by Muffenbroek, and by Gravefend; a course of lectures on natural philosophy, by Helsham; a compleat system of pneumaticks alone

by Wolf, of Germany, and systems of astronomy by Keil, Ferguson, &c.

LEARNED SOCIETIES.

TO fulfil, in some degree, the plan of Bacon Lord Verulam, which was to collect important philosophical facts and experimental knowledge, the different literary societies were formed. The Royal Society of London was established by charter in 1663 by Charles the Second. At Oxford, twenty years earlier, a literary association had been formed, but during the civil wars was interrupted. In 1666, the L'Academie Royale de Sciences was erected in France, and nearly upon a similar plan to the British: each was supported by the voluntary contributions of its members. A volume of the Philosophical Transactions, and of the French Memoirs were then published at intervals. Italy, Germany, and some other countries afterwards followed these examples. In 1670, the Academia Naturæ curiosorum was instituted in Germany; 1682, the Acta Eruditorum were published at Leipswick. Florence also erected a Literary Academy. In 1699, under Lewis the 14th, the French Academy was new modelled and improved. This refined Academy came nearer to the inestimable model marked out by Bacon. To each of the learned members were assigned their distinct provinces for prosecuting discoveries: all experiments were to be confirmed in presence of the whole body, and not
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to be published unless approved off by them : the expence of experiments and machines was defrayed by the King ; and the Members were incited to useful discoveries by liberal rewards and pensions. In 1711, a Royal Literary Academy was instituted at Berlin, under the direction of Leibnitz. And in 1725, a Literary Academy was established at Petersbourg by Peter the Great, who allotted a magnificent house and liberal pensions to the Academicians. In 1739, and 1746, the Monarchs of Sweden and Denmark each incorporated a Literary Society. In 1731, an Academy of Surgery was founded in Paris by Lewis the 14th, and for a considerable time, a volume of observations and singular cases on surgery and obstetrics, were annually published. To those national treasures may be added the French "Journal de Sçavans:" and in the present century, the College of Physicians of London and of Edinburgh, and some Literary Associations, published several volumes of Medical Essays, Philosophical Essays, and Medical Commentaries.

By means of those great public collections, the sciences of natural philosophy, including mechanics, pneumatics, hydrostatics, hydraulicks, and astronomy, of mathematicks, of anatomy and physiology, chymistry, botany, natural history, obstetrics, surgery, and the practical parts of medicine, of agriculture, gardening, and, in a word, every useful art and science received an immense supply of new experimental facts and observations : they were for a considerable time the repositories, together

and store-houses of the collected intelligence amassed together by numbers of the most learned men throughout Europe. Boyle, Halley, Newton, and the most eminent philosophers in their respective nations, enriched those Royal Magazines with many of the fruits of their labours. On various medical subjects, they contain a multitude of singular cases and "*Lusus naturæ*." The different publications at length amounted to many hundred volumes, and in such a promiscuous mass it may be concluded there were a mixture of discordant and trivial materials. Arrangements and abridgements therefore, though not yet finished, of the principal papers in the Philosophical Transactions, and French Memoirs have been attempted, and with great success. The Philosophical Transactions down to 1700 have been abridged by J. Lowthorp; several other writers have continued down the abridgment to the middle of the present century; and have condensed the essence into 12 quarto volumes. The "*Memoires de l'Academie Royale de Sciences*," during the first thirty-four years have been abridged by J. B. Du Hamel, and we have a later compendium of this society's works with figures and plates. No man of literature, and who aspires to be an Author on any of the above sciences, should neglect to peruse those different literary collections. Boerhaave calls the French Memoirs, "*Liber incomparabilis qui palmam omnibus eripuit, & quo nullus plus profuit Scientiis!*"

BOTANY.

B O T A N Y.

MOST of the delicious fruits, and fragrant flowers, with many beautiful trees and shrubs which adorn European gardens, are the growth of the Eastern climates, from which they were originally transplanted and naturalized to our soil.

THE industry of the moderns, and the discovery of new continents and islands have made immense additions to botany, and to the number of plants, but out of that large catalogue, medicine has hitherto obtained very few remedies. Public botanic gardens were first planted in Italy in the 16th century: until that event the plants of the ancients were frequently confounded, and different plants sold under the same name. J. Bauhine in the same century, wrote three volumes on the history of plants, and the virtues ascribed to them by the ancients; he was followed by another able botanical commentator, F. Columna, the first of the moderns who engraved the figures and representations of plants upon copper-plates. The ancient herbalists had distinguished plants chiefly by the character of the roots, either as bulbous, that is, composing one solid mass, or as ramified and fibrous. C. Gesner, the celebrated naturalist of the 16th century, is, I believe, the first who arranged together plants which resembled each other in their flower and fructification. Gesner was followed, in the same century, by Cæsalpinus, an Italian

lian botanist, who introduced the classification of plants by their organs of generation, residing in the fructification or flower. Tournefort and Linneus afterwards adopted the same fundamental mode of arrangement. J. Tournefort, at the expence of Lewis the 14th, and about the beginning of the present century, made a large collection of new plants for the garden at Paris. Sir Hans Sloane collected a number of new plants from the West Indies, and published a description of them with plates: to him we are not only indebted for the establishment of a magnificent Museum of Natural History, but also for a legacy to the Botanic garden, first planted in the suburbs of London in 1673, and the first in this island. Sir Joseph Banks and Dr. Solander have lately collected upwards of one thousand new plants from islands in the Pacific Ocean, a splendid impression and description of which will soon be presented to the public.

BOERHAAVE computes the vegetable list collected even in his time to amount to upwards of eleven thousand; that is however, including the species. Multitudes of these are used in food, in luxury and delicacies, many serve as aliment to the lower classes of animals, others contribute to ornament the forest, and to all the arts of man. Including all the different vegetable simples, whether employed in leaves, roots, bark, resin, gums, &c. (and exclusive of compound mixtures) there are not in the whole two hundred of them now administered in medicinal prescriptions, and in the late editions of the Pharmacopœias, their number is curtailed.

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To arrange the vegetable kingdom under a few general heads, so that each plant may be expeditiously distinguished, has been the sole aim of botanic systems. The collection of new plants became so numerous, that much ingenuity has been exerted in the preceding, and in the present century, to adjust their methodical arrangement. Modern botanical systems have prevented a multitude of errors in distinguishing plants; but they are all silent on the medical virtues of vegetables: their scheme is merely to reduce them into classes, orders, genera and species, and by that regular disposition to assist the memory in discriminating each plant. To accomplish this purpose, several systems have been invented: the best is that which enables us to discriminate one plant from every other, with the most dispatch and certainty.

RAY and Morison, in the 17th century, had each invented botanical systems: a considerable part of Morison's large vegetable collection is borrowed from Cæsalpinus. Tournefort soon afterwards invented a system less complex than that of Ray, who had attended with fatiguing minuteness to roots, fibres, leaves, &c. by which the memory of course was loaded. Rivinius and Hermanus next attempted to improve upon Tournefort, and by one or two marks about the fructification to discriminate plants. On trial, this scheme was found to increase confusion, and to multiply perplexities: they were too often obliged to deviate from their original plan of brevity in subdivisions of the genera

nera and species, and the memory was more embarrassed. Not many years have elapsed since C. Linneus of Sweden published a botanic system. He condensed the whole vegetable kingdom into twenty-four classes; Tournefort had made seven hundred. Linneus distinguished the Classes principally by the male parts or stamina, either from their comparative number, their figure, proportion, connection, or situation. Thus, the female or pistillum has 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 20 husbands or stamina; there are thirteen classes of this sort, called from the Greek, Monandria, Diandria, Triandria, Tetrandria, Pentandria, and so on. The classes are again subdivided into a few Orders formed from the wives or pistils, either as to number, or other striking peculiarities. The Genera are formed from a few characteristic marks peculiar to each, and confined chiefly to the fructification. In this universally established mode, plants cannot be distinguished but when they are in flower, and in the arrangement several plants known under different names, are often huddled together as species of one genus. Linneus's, "Genera Plantarum" do not exceed thirteen hundred, and to these only distinct or proper names are affixed: an infinite and burthenome number of names are in this way contracted: under these few genera many thousand species are crowded, and a cluster mustered under each genus, as having affinity with that common parent. The distinctions of the species are formed from various circumstances; from the shape, colour, smell,

smell and taste of the plant, the country, station or place in which it resides, the time of its generation, its duration, its uses in life, and other peculiarities in the leaves, flowers, branches, stem, roots, &c. In looking carefully therefore at the flower of any plant, we first endeavour to discover its class, and from thence gradually to trace it to the order, genus and species. Linneus's system is allowed to afford the most easy and expeditious index for distinguishing vegetables; in other respects it resembles his natural history; there is a licentious prostitution of new-coined words, it is a dreary catalogue, and is only to be consulted occasionally.

NUMBERS of the botanic writers have enriched their description of plants with engraved plates. Vaillant, Dillenius, Erhet, Jacquin, Trew, and Schmiedel, have each given many figures of plants: a most laborious and expensive publication, a universal system, indeed, of vegetable impressions was executed under the direction of the late Dr. Hill. On the growth, structure, nutrition, perspiration and inhalation of vegetables, many curious and entertaining experiments will be found in the works of Grew, Malpighi, Leeuwenhoek, Du Hamel, and Hales. I. F. Seguiet, and O. Montalbanus have collected an enormous catalogue of botanical writers; and on every branch of gardening and agriculture, theoretical and practical, an exuberant list of writers is collected by Haller.

NATURAL HISTORY.

THE principal objects of natural history are, to distinguish all the varieties of animals, birds, fishes and insects, to represent them in figures and engraved plates, to exhibit their manners, modes of life, propagation, and duration, and every other circumstance respecting them, that can contribute to curiosity or useful information. This is a study which unites the most delightful entertainment and instruction, and which conduces to the illustration of many parts of the human physiology.

C. GESNER, in the 16th century, is the first great modern naturalist and collector, and upon this science he wrote many volumes. Swammerdam, of Holland, in the 17th century, assisted by good microscopes, first explained the curious generation, propagation, and structure of the Insect tribes. Trembley, (1740) by accident, observed, that some small animals, divided into pieces, propagated like the cuttings of a tree, and that the mutilated parts were soon renewed: this extraordinary regenerating power of the Polypus has raised an exception to the general system of generation. Reaumur's "*Mémoires pour l'Histoire des Insectes*," contain many new discoveries. Linneus, of Sweden, has done nothing more than barely to arrange the different materials of natural history, and in this artificial

artificial arrangement, animals of the most opposite nature, in similitude, and in most other qualities, are frequently forced together into one group. Whoever wishes to go beyond mere order and method, and to be introduced into the delights of this agreeable study, must consult another writer of the present century, and the Prince of all modern naturalists, Buffon. Linneus is a dry, inanimate register, Buffon is an elegant and entertaining writer, who paints, in the most lively colours, the history of every living creature that inhabits our Planet. Goldsmith is a pleasing copyist of the French Pliny. If to these authors be added one of the preceding century, G. Blasius' compilation of the dissection of various animals, birds and insects, the physician will have a sufficient fund of information on this subject.

PUBLIC collections and Museums, now amassed and systematically arranged in several cabinets of Europe, are the proper schools to study natural history, and to leave correct and lasting impressions upon the memory : there we behold at one view, animals the most gigantic and minute, quadrupeds, birds, fishes, insects, shells, fossils, spars, gems, minerals and metals, collected and ransacked by naturalists from all parts of the earth, and ocean, there likewise we behold the variegated plumage of the feathered tribe, preserved in the utmost perfection.

The theory of Earthquakes and Volcanos is a grand subject, which has long engaged the at-

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tention and curiosity of learned men, from Empedocles and Pliny down to the present time. Two elegant modern writers, Sir Wm. Hamilton and Mr. Brydone, have published ingenious reflections on this subject. In the course of those enquiries, many curious speculations have been suggested respecting the structure of the earth, the encroachments of land and sea upon each other, and the chronology and age of the world.

MATERIA MEDICA AND PHARMACY.

THE systems of *Materia Medica* contain a history of the vegetable, mineral and animal substances employed in medicine, their distinguishing marks, the proper time for gathering each plant, so as to preserve its virtues in the greatest perfection, and the medical uses and effects of each. *Materia medica* is confined chiefly to the medicinal simples; the business of Pharmacy, is to describe the various medical mixtures and preparations, of whatever nature, and the manner of conducting the different processes, and of forming the different compounds.

SEVERAL valuable remedies, mostly of the vegetable class, (exclusive of the chymical) have been discovered by the moderns; many of which have been imported from America, and the West Indies. From that new world we derived Guaiacum, whose decoction was so celebrated formerly in the cure of the venereal disease: the resin of the same tree, or an extract made from
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from the wood, and either in substance, or in a vinous, or in a volatile solution and tincture, is a medicine given often successfully in chronic rheumatisms; the extract is an ingredient in a few compound prescriptions, and is exhibited in some cutaneous diseases. Sarsaparilla and Sassafras, from the same region, have long been honoured with a degree of secondary merit in the cure of Venereal, and of a few cutaneous diseases.

THE bark of a tree growing, and first discovered, in Peru, began, in the 17th century, to be prescribed in Europe. The missionary Jesuits, in 1639, had first carried this divine medicine from South America to Rome, on perceiving that the Indians of Peru employed it with remarkable success in the cure of remittent and malignant fevers. Great prejudices were fomented against the Peruvian bark upon its first introduction: it was sold at a most extravagant price, and being prostituted to an article of avaritious traffic, was too often adulterated by the venders. From this and other causes the bark for some time lost part of its reputation. The sticklers for Hippocrates, and old customs, were alarmed at innovations which threatened to undermine the whole doctrine of critical days, and to cure fevers with less risk and more expedition. Until the present century, Peruvian bark was not given, in Europe at least, in sufficient quantity to produce decisive effects, neither were its amazing and universal powers so universally known and con-

firmed in the cure of intermittent, remittent, and putrid fevers, in some bad species of small-pox, in gangrene and mortification, and the putrid fore-throat, in some chronic diseases affecting the stomach and digestive organs, in weakness, and disorders called nervous, and in some cases of female uterine relaxation. The discovery of this single remedy is an important era in the annals of medicine: before its introduction, the stomachic bitters, such as gentian, chamomile flowers, and orange peel, were almost the only feeble remedies administered by the moderns to stop the paroxysm of intermittents. The Eleutheria, or Cascarella bark, in appearance resembling the Peruvian, and said to be imported from one of the Bahama Islands, towards the end of the last century, was first used by some of the German Physicians; with them it is yet in considerable esteem in the cure of intermittent, and of epidemical remittent fevers, and dysenteries.

THE vegetable balsams of Peru, Tolu, and Copaiba partake of similar qualities, and differ only in degree. The Peruvian Balsam has been recommended to strengthen the nervous system when debilitated, and also to attenuate viscid humours: the Copaiba balsam is exhibited with the same intention, and also in chronic venereal gleet, in the fluor albus, and in some chronic diseases of the breast.

IPECACOAHA, a mild emetic, and Jalap, a purgative, were brought in the last century from
South

South America, and the roots of each recommended in medicine; the former, by Piso and Helvetius, in diarrhœas and fluxes. From ipecacoanha, opium, and vitriolated tartar, is compounded a sudorific powder, called after the inventor, Dover's powder, which is often given in rheumatisms to promote a copious sweat, and in that way to cure the disease. Serpentaria, or Virginian snake root, is commended as a diaphoretic and diuretic, and as of great efficacy in malignant and epidemic fevers: sometimes it is joined to Peruvian bark. Seneka, or rattle snake-root, is likewise given as a diaphoretic and diuretic.

SIMAROUBA, a bark from Guiana, is described by Deigner, and several other authors, and recommended as a safe astringent in chronic fluxes. In the same complaint is exhibited the Terra Japonica, an inspissated juice from a species of palm-tree, a native of the West Indies: with it is often mixed another agreeable astringent, the Tormencil root.

RHAZES, the Arabian, in some cases of the small-pox and pestilential fevers, directed Camphor in a very small quantity, mixed in some compound prescriptions, syrups, and electuaries: with cooling acid fruits, it was thought to check the coagulation and putrefaction of the blood. We are now supplied with this medicine from two islands in the South Seas, Japan and Borneo. The Borneo is of a much superior quality to the Japan, but reaches us shamefully adulterated; in several pounds there is not one ounce of genuine camphor. The Chinese

esteem camphor in the first class of medicines, and at Borneo often pay for a single pound weight, thirty-five pounds sterling English Money. Several of our European physicians, Hoffman, Lind, and others, think camphor a remedy of very considerable efficacy in some species of fevers, particularly those of the malignant kind. It is used internally and externally in several compound mixtures of the medical shops: in the latter case it is generally directed to pains, inflammations, and tumours, and to check gangrene.

From China and other parts of Asia, Musk, one of the strongest perfumes, is imported; in the eastern countries it is accounted a great medicine. By experiments of Dr. Wall, published in the Philosophical Transactions, musk taken internally is represented as of considerable utility in some convulsive and hysterical diseases, and in dangerous stages of malignant fevers, accompanied with twitchings of the tendons, and convulsive starting. Ambergrease, another more agreeable perfume, is recommended by Hoffman in hysterical and nervous diseases.

BLISTERS, made from the caustic fly or insect, called Cantharides, had been prescribed in Italy by Mercurialis in putrid fevers, but in some instances proving unsuccessful, his life was endangered from the popular prejudice and novelty of the practice. In the following, or 17th century, blisters were strenuously recommended in infectious fevers, by Riverius and Etmüller. Lind, and other writers of
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the present century, have confirmed the veracity of their observations. Blisters are now also applied, and with happy effects, over pains, occasioned by internal topical inflammations, as in the pleurisy, and peripneumony, and in pains of the breast, accompanying pulmonary consumptions. When the small-pox have suddenly sunk upon the surface, especially about the crisis, or compleat maturation of the pustules, it is usual immediately to apply blisters to the shoulders, legs and feet.

FROM the Palma Christi, or Resinus Americanus, an expressed Oil is obtained: it is a late discovery of the present century, and is now often resorted to as a powerful and safe laxative in obstinate costiveness, and in the dry belly-ach. We have since found the same tree in Italy, and other southern parts of Europe. From the Brazils has been brought the Pareira Brava, the root of which is in estimation amongst the Brazilians and Portuguese in nephritic and calculous complaints: Geoffroy recommends it in ulcers of the bladder, and in the humoral asthma.

GINZENG root is esteemed by the Chinese as a great restorative: with us it is as yet rarely used. Salep is a grain used both in diet and medicine; in Turkey it is a celebrated restorative in broken or weak constitutions, and with water, forms a mild nutritious jelly, well adapted to the support of sick persons, labouring under various infirmities.

HEMLOCK had long been in use as an external application to disperse hard and schirrous tumours,

but taken internally, had always been considered as a strong poison. Lately, however, Dr. Storck, of Vienna, recommended an extract from the hemlock leaves, taken in small doses, as a powerful remedy in many obstinate chronic diseases, and in particular in schirrhous and cancer. After repeated trials, its success in this corroding ulcer is found very precarious: in the most favourable circumstances, it is an exceedingly stupifying remedy, and tardy in its effects. I am apprehensive that the character of hemlock in cancerous cases is likely to share a similar fate with the Bishop of Cloyne's tar-water in consumptions, or with soap-pills, lime water, and the liquid shell in calculous complaints.

THE roots of male-Fern had been retailed as a nostrum by a French empirick in the cure of the human tape-worm or tinea, which is found so difficult to be dislodged from the intestines. This nostrum was purchased for a considerable sum of money by the French King, and Physicians then discovered, that the same remedy had been administered by Galen in the above complaint. The filings of tin is another modern anthelmintic, or worm remedy.

ALLUM was prescribed internally by Helvetius, as a powerful styptic in hemorrhages from the uterus and lungs: it is also recommended by Dr. Mead in the fluor albus, and in the diabetes: externally it is used as a repellent and astringent.

DR. HILL, the botanist, zealously extols three vegetable simples, which had long made a part
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of the *Materia Medica*. The first is the lesser *Centaury*, a strong infusion of which, or a vinous tincture from the leaves and roots, is an agreeable stomachic bitter in weakness, and relaxation of the stomach and indigestion: the two others are *Spleen-wort* in the hypochondriacal disease, and *Valerian-root* in nervous diseases: the latter had been recommended by F. Columna in the epilepsy.

THE roots of the *Bardana*, or common bur, are diuretic and sudorific; decoctions of them have lately been used in rheumatic and some other disorders, and as succedaneums to the *sarsaparilla*.

SOME of the vegetable plants called stomachic bitters, and of those called cordial, nervous, anti-hysterical and pectoral were known to the ancients: their virtues are in general in the subordinate degree, and they may be found in all the treatises of *Materia Medica* and *Pharmacy*.

VARIOUS nostrums and pretended remedies have been imposed upon the public by modern medicasters, against the poisonous bite of a mad animal; such are *Turpith mineral*, musk, &c. those who have the misfortune to meet with such accidents, would act wisely and consult their own safety by attending to the maxims of the ancient physicians. *Plaintain-leaf*, applied externally, and a spoonful of the juice taken internally, is said to be discovered in North America, to be an effectual specific against the poisonous wound of the *rattle-snake*.

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THE materials of medicine are not only administered single, but are multiplied and exhibited as amongst the ancients, in various forms and combinations. They are prepared in extracts and resins, in expressed juices, in medicated infusions, in essential oils, in distilled waters and spirits, in decoctions, in wheys, in vinous and spirituous tinctures, in elixirs, in ales, in electuaries, in conserves, in confections, in preserves, in syrups, in oxymels, in powders, in troches, in lozenges, in pills, in bolusses, in lohocs, in emulsions, in juleps, and draughts, in gargarisms, in injections; externally, in lotions, plasters, ointments, cerates, cataplasms, epithems. These variegated preparations possess more or less the virtues of the different simples, which enter into their composition: to treat separately of each, cannot be expected in an elementary treatise of this nature, and I could say very little new upon the subject. From several chymical or pharmaceutical resolutions, preparations, and mixtures of medicinal substances, powerful remedies are obtained: on the contrary, the activity of some simple medicines may be weakened and destroyed by heterogeneous composition.

In the last century, and in part of the present, the pharmacopœias, and shops, and too frequently the sick, were overloaded with syrups, and distilled waters, simple and compound, with boles, conserves, and an ostentatious heap of compositions, loathsome or insignificant. The shops have, very
properly,

properly, if I may be permitted a technical phrase, been purged of a considerable part of this trash. The imperial, heavenly, and alixipharmic waters, the exhilarating confections for the heart, the whets for genius, the pearl juleps, the clays, boles, dead earths, several of the volatile acid spirits, and distilled oils, the bones and hoofs of some animals, Egyptian mummies, dead men's skulls powdered, and a farrago of such feculence, are all banished from the pharmacopœias; the syrups and distilled waters are now contracted into a moderate compass, together with the external applications, plasters, ointments and cerates. By this reformation, sick people are less liable to have their stomachs surfeited every hour with a jumble of drugs of no importance or efficacy. Some of these were ancient and profitable legacies; they were useless trappings added to the train of physick, and contributed to the strut of mystery and pomposity.

DR. PITT, a Fellow of the London College, about the end of the last century, published a treatise on the frauds of physick, wherein he insinuates, that some physicians of his time wrote large prescriptions, and such as tended to the Apothecary's gain, because the people commonly give the apothecary the power of appointing the physician.

“ The principal intention (says Pitt) of apothecaries originally was to prepare and compound medicines, they were like printers to orators, authors and poets, pioneers to an engineer, or
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“ masons to an architect ; they were the cooks of
 “ medicine ; but time and custom have introduced
 “ many innovations. The people now send to
 “ the shops for advice in all cases : the apotheca-
 “ ry does not, it is true, take *fees in specie*, but
 “ makes the patient pay extravagantly by intole-
 “ rable prices on heaps of medicines, and by an
 “ overplus of many doses. He breaks their
 “ heart and substance with cordials, and by tricks
 “ of subdividing into little parcels, so that in the
 “ sum total of the bill, many great fees are hid.”
 “ Another caustic critic, Dr. Mandeville, la-
 “ mented, “ that in dangerous cases the lives of the
 “ sick were trifled with, that they were drenched
 “ with an extravagant medley of distasteful potions,
 “ or with candied preparations, grown perhaps
 “ mouldy in pots, and with muddy distilled waters,
 “ dead and insipid. When medicines (says he)
 “ of real force require vehicles, many natural and
 “ more agreeable ones may be found in the simple
 “ infusion of a plant, or in coffee, tea, small-beer,
 “ whey, and wine diluted. When cordials are
 “ necessary, wine is the most invigorating and
 “ palatable.”

How far any part of the above coarse and se-
 vere censure will apply at present to medicine, or to
 any individual of the faculty, I pretend not to deter-
 mine. There is one thing which Pitt, and all the
 other writers, so jealous of usurpation upon the
 doctlorial prerogative, have overlooked. Admit-
 ting, for a moment's argument, their position, that

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apothecaries are too numerous for the mere purpose of preparing and vending medicines, that in prescribing for diseases they go out of their province, and trespass upon the physicians copyhold, and that often too many medicines are forced upon the sick for avaricious purposes, still it appears to me a natural and inevitable consequence, that when physicians fees were by custom in this island settled at one guinea for a visit and advice, that the laborious and great majority of the people must either apply at a cheaper shop, or implore assistance as objects of charity. Persons who cannot afford claret and burgundy, must be content with malt liquor or small-beer: in the latter case it would be impracticable for physicians, however liberal and philanthropic, to devote their advice and attendance to the multitudes of diseased supplicants.

I have often thought, as medicine is now practised in this island, that sick persons and apothecaries would both be benefited by the former paying a reasonable sum for the apothecaries visits, instead of forcing him to lay all his expences upon the number and quantity of prescriptions. There can be no good reasons to expect, that apothecaries should be so different from all other men, as totally to neglect their own private emolument; and to dedicate “gratis,” all their time and attention to sick persons, nor that like Franciscan friars they will be contented to subsist on penurious charity: they are flesh and blood, they have mouths to eat, and families to maintain; some of them now receive

ceive a liberal medical education, and if they have merit, I can see no crime in their acquiring riches by that profession. The only effectual remedy, in my perhaps short-sighted ideas, that can give the lower class, and the great mass of the people, the benefit and advantage of judicious medical advice, that can lessen the superfluous multitude of ignorant medcassers and apothecaries, is a national establishment similar to that supported by the ancient Romans, and at this day by the modern Italians, where Physicians, with fixed salaries, are appointed by the state to visit and prescribe for the poor at their own houses. Large hospitals alone, would be too expensive, and it is easy to demonstrate, would be inadequate to the purpose. If this scheme, so much wanted to be put in execution, should not be relished, Physicians might render their skill of more general use, and oftener resorted to by diminishing, with unanimous consent, their usual fees to a half, or even a fourth; and still more by preparing and compounding the medicines which they prescribe, and for which they may find examples in the person of Hippocrates, and of the present Physicians of North America. This indeed might seem to derogate from the medical dignity, but I am not writing as the interested partizan of any sect.

THE most celebrated modern writers on *Materia Medica* and *Pharmacy*, are the following. J. Bauhine, an Italian, and mentioned formerly amongst the botanists, in the 16th century, wrote

a history of plants, and of the medical virtues ascribed to them by the ancients: Haller prefers him even to F. Columna, another Italian, who likewise discriminated the Greek and Roman medical plants, and who has been called the decypherer of Dioscorides. G. Fallopius is the author of a *Pharmaceutical Treatise*, in the same century.

IN the 17th century, *Materia Medica* received an important benefaction from C. Bauhine's edition of Mathiolus's commentary on Dioscorides. D. Ludovicus selected and compiled into a compendium the essence of all the different chymical and pharmaceutical materials then in medicinal use. A. Sala wrote *de preparatione medicamentorum*, We have a chymical and pharmaceutical treatise by Schroeder, a *Materia Medica contracta* by G. Marcgraave, and a *Pharmacopœia* by Lemery.

IN the course of the present century we have treatises on *Materia Medica* by various authors, by Boerhaave, Gaubius, Cartheuser, Geoffroy, De Gorter, Alston, Cullen, and Vogel: the two last are in great estimation. On *Pharmacy and Compound Prescriptions*, we have Junker's *conspectus formularum medicarum*: Radcliff's *Pharmacopœia*; a small pamphlet, containing the recipes of a celebrated London empiric, Dr. Ward; and the *Pharmacopœias* published by the Colleges of London, Edinburgh, and by the different medical colleges throughout Europe. Haller calls the Wirtemberg *Pharmacopœia* published in 1750, "*compendissimum & plenissimum opus.*"

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To these we may add Lewis's Dispensatory; and Fox's select London prescriptions; *cum multis aliis*.

THE remedies, whether simple or compound, which each supposed the best adapted to every disease, are treated of, by the practical writers hereafter to be mentioned, and in the method of cure, they are necessarily equally attentive to regulate the quantity and quality of the diet. Some of the modern writers on Materia Medica have treated likewise, but superficially, of dieteticks. I shall hazard a very few, yet general propositions on the latter subject.

DIET differs "toto cælo," amongst different nations, and there is no less difference between the tables of the poor and the affluent. Happily, the human machine has the power of equally accommodating itself to a great diversity of climates, air, heat, cold, and food. Nature, and the industry of man, have provided a most plentiful banquet of animal and vegetable nutriment, and of delicacies. Of the two hundred genera of the quadrupede creation, man eats of but very few; of fish from the sea, and from fresh water, and of fowls and the feathered tribe, many more are consumed by man; of grains, herbs, stems, leaves, roots, fruits, and spices, a luxuriant variety. These are not only eat in the simple form, or at least with very little preparation, except the mere action of fire, but are infinitely diversified by mixtures, and the elaborate preparations of cookery, by fermentation, distillation, and many other

other processes. Unfortunately the great mass of mankind can only look upon these dainties, like Tantalus, with ungratified cravings. The majority of the human species are condemned to a fortuitous and precarious subsistence; few, compared to the whole, have the means of purchasing luxuries and delicacies, but must rest satisfied with the food which is cheapest and easiest procured. To read over some specious systems of diet, one could only conclude, that they were written for those who had a coach and six at their doors, and a French cook in their kitchens. Amongst most rude and barbarous nations, cookery is scarce known; some tribes of savages use very little more cookery to their victuals, than the beasts of the forest. On the other hand, in civilized and polished societies, the alimentary and dietetic art, tracing each ingredient through its simple and crude state, and afterwards as diversified by mixtures and culinary processes, is of wide extent. A most plentiful and tempting repast is spread out to the sound, the valetudinarian, and the diseased. To understand this subject, so far as books can impart information, Physicians should peruse the different medical treatises on diet, cookery, and on the preparation of fermented and distilled liquors. To take a still more comprehensive view of dieteticks, they should inspect the diet, customs, and manners of various nations as recorded by voyagers and travellers, of which

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there are many concise collections, and contracted compilations.

As the materials of medicine, of food, and of drink are too frequently adulterated, it is incumbent upon professional men to be able to distinguish the genuine from the spurious. The adulteration of bread, fermented and distilled liquors, and of tea, are proper objects of medical dieteticks.

WRITERS *on the* PRACTICE *of* MEDICINE,
THERAPEUTICKS *and* PATHOLOGY.

“ HIC imprimis sollicitus commendabo auctores, nam errores hic erunt lethales aut perniciosi.” (Boerhaave.) Credulity in this subject is a dangerous rock, and there is less hazard of being betrayed into quicksands by believing too little, than by running into the opposite extreme of implicit faith. To distinguish the false and fabulous, and to ascertain the degrees of credibility due to authors of this class, mature examination and sound judgment are necessary.

THE contradictory theories and systems of medicine, and jarring maxims in the actual cure of diseases, have been, and in many instances with justice, objects of satire. In assigning the causes and seat of diseases, and even in the method of cure, which is the end and essence of physick, readers are frequently bewildered in ambiguity and uncertainty,

uncertainty. Contradictions in prescriptions and practice are not alone glaring between ancient and modern physicians, and between distant countries and universities, but in the same city, and even in the same disease, the sons of Esculapius on many occasions differ widely. To use a common and proverbial phrase, Hippocrates often says, *Yes*, and Galen flatly says, *No*. Amidst this fluctuation and uncertainty, we are less surprized to hear in conversation, and to read some learned writers, who consider medicine as a fallacious art, arraign it as a composition of fraud, deride it as a system fully as erroneous, and to be depended upon equally with necromancy and astrology.

MEDICINE, we must confess, has been disgraced with manifold abuses; so have most professions and arts, and all might be reprobated upon the same principles which provoked the spleen of satirists against physick. Partial abuses are insufficient to overturn general principles; and it is unfair to produce the absurdities and ignorance of medical artists against the stability of the science. With many doubts, mysteries, and imperfections, medicine has certain principles which are as firmly established as any in mathematicks. The subordinate branches, anatomy, and many parts of physiology, chymistry, botany, and natural philosophy, all admit of demonstration. Diseases themselves are not confused unsteady motions of the human machine excited by something hurtful. The experience of above two thousand years, shews that dis-

eases observe a constant regularity in their symptoms, and in some degree in their motions and determinations, and that each is stamped with specific characters; the symptoms accompanying the disease, as a shadow does the body. Indeed the febrile and nervous class, often assume various faces; but amidst all this tumultuous anarchy of accessory or secondary symptoms, men of judgment can in most cases discern the true elementary type. The leprosy is now the same filthy scurf as in the days of Moses. The epilepsy is exactly similar to that convulsion mentioned in sacred history. The whole catalogue of acute and chronic diseases, have the same identical marks annexed to them, which we find in the Greek and Roman writers. The small-pox and measles have not changed from the days of Rhazes, the Arabian. The venereal disease is now distinguished by the same signs which accompanied it from America. These few examples serve to shew that diseases, whether external or internal, whether acute or chronic, are presented to us over and over again in nearly the same form and shape. I speak of essential marks and prominent features only: in degree, violence, and many other circumstances, there are, undoubtedly, gradations and shades which may vary the picture.

We have likewise facts and demonstration to determine the causes of many diseases. Effluvia from putrid marshes excite agues, remittent fevers, and fluxes; putrid and specific contagions emitted from diseased animal bodies, or from
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tainted apparel, excite fevers of a nature peculiar to each, whether those happen to be the plague, the small-pox, or the jail fever: the bite of a mad animal excites hydrophobia, or canine madness: living long at sea upon salt provisions, and without vegetables, generates the scurvy: multitudes of infants are destroyed by the foul atmosphere of large cities. In a word, most diseases, whether originating from external or internal causes, can be traced to their different sources; either by constant uniform observation, and rational deduction, or by the lights acquired from morbid dissections.

AGAIN, prognosticks wrote in Greece by Hippocrates, which foretold in that country the termination and event of diseases, though not always infallible, are found, after so many ages have elapsed, to be correct observations of nature, and in different climates of Europe, are constantly appealed to by physicians. We can even measure, with tolerable accuracy, the annual waste among the human species, from one year to one hundred; the waste appears to be governed by general laws, and to depend upon natural causes. Lastly, the operation, or actual effects of many medicines, rest upon proofs equally solid; one medicine calms to sleep, another vomits, another purges, another propels sweat, another urine; Peruvian bark cures an ague, mercury the venereal disease, fresh vegetables or fruits the scurvy, and so on.

UPON deliberate reflection, even the versatility of both ancient and modern practice, will

not appear so astonishing, nor sink the possession in the opinions of unprejudiced judges. There was much less difficulty to describe morbid symptoms, to dissect human bodies, to make experiments, mixtures, and decompositions in bottles, crucibles, and furnaces, and to collect and arrange plants, than to discover remedies for the cure of diseases, and the means of diminishing mortality amongst the human species. Mankind at first were in possession of very few, and impotent aids; the beneficial effects of the medical science were during many centuries feeble, and by slow degrees it rose to general use and importance: time, accident, reiterated observations and experience, added many powerful remedies, the old then became obsolete, and were relinquished for those of greater energy. Diseases themselves have not changed, but the practice in physick, obstetricks, and surgery, has undergone repeated changes. I can see no more reason for our adopting, in all cases, with absurd awe, the Greeks and Romans as models of medical practice, than if we were blindly to copy them in ship-building, navigation, or jurisprudence. Besides, different climates, seasons, age, custom, &c. will render some variations in practice necessary, even in the same disease.

REMEDIES, and the means of cure in many diseases, have varied in the course of time; the virtues of several medicines yet remain problematical; drugs have had their run and fashion; several, like the rotten bones of saints and martyrs, have

have descended to us by superstitious tradition ; fictitious powers have been assigned to them, and ratified by positive assertions ; a new theory has for a time introduced a new mode of practice, and with the utmost capriciousness admitted and proscribed medicines in conformity to the different systems of the writers. It is impossible to foretell what revolutions may yet ensue. All that we can at present pretend to say is, that such a medicine is one of the best which human prudence and experience, after many trials, has yet brought to light, but better probably may yet be discovered. The practice, which a hundred years ago might be thought perfect, would in many instances be now justly condemned by Physicians and Surgeons. This part of medicine and surgery is a moving picture, which, with the pharmacopœias and forms of recipes, is every century undergoing some changes. For these reasons I shall class the practical writers of each century separate, and mark the rise and progress of useful discoveries. In a few instances, however, I shall be under the necessity of breaking through the strict chronological order and precedence of each writer, where the essential matter would suffer, or the memory be more confounded by too rigid adherence to mere form.

WITHIN the last three centuries, Europe has generated swarms of practical authors and pathologists. They may be divided into writers of general systems, writers upon one or more diseases, and of detached or miscellaneous

observations. Systems of medicine in general resemble universal histories; they are compilations and judicious observations, extracted from all preceding authors, a collection of a multitude of minute particulars, arranged in order, and under separate heads: they necessarily include the history, symptoms, causes, prognosticks, and cure of diseases. Systems of pathology attend to morbid causes and effects.

THE practical writers of the 16th century, on the venereal disease, and on the scurvy, have already been mentioned. The following authors flourished principally from about the middle, to the end of the same century. L. Duretus, an Italian, wrote Commentaries "in Coacas Prænotiones Hippocratis;" the Greek prognosticks are arranged in better order, and the work possesses intrinsic merit: Boerhaave calls it, "Thesaurus inestimabilis." Lommius also wrote a Treatise on the symptoms and prognosticks of diseases. P. Alpinus, another Italian, at the extreme termination of this century, published an excellent book, "de præfagienda vita & morte ægrotantium:" in this the prognosticks of Hippocrates are collected and arranged, and to them the author has added the theory and comments of Galen. Alpinus also wrote a treatise on the medical practice of the modern Egyptians. C. Martini, and F. B. Donatus, "de providendis morborum eventibus," complete the prognostic writers and commentators of this period. On the "Methodus Medendi," we have L. Mercatus, and F. Vallesius, (two Spaniards) P. Perneumia, and N. Pifo

N. Pifo “ de cognoscendis & curandis morbis internis,” and A. Benedictus “ de re Medica & curatione morborum.” J. Fernel, a Frenchman, wrote a system of physiology, pathology, and medicine which was admired by his cotemporaries, but which from the succeeding discoveries in anatomy and other parts of medicine we may naturally conclude falls short of perfection. Fernel is the first who noticed the aneurism of different arteries from mere dilatation; and he is the first who mentioned the gonorrhœa, as a symptom of venereal infection. Two other systematic authors of this century are J. Hollerius and F. Plater. Hollerius commented on Hippocrates, and added the notes of Duretus on the Greek prognostics: Boerhaave is pleased to call this, “ nobilis & aureus liber.” A. Fæsius is a celebrated interpreter and editor of Hippocrates’ works. H. Fracastorius wrote, “ de contagionibus & morbis contagiosis.” The attempt was judicious and meritorious, and pointed out new paths for important investigation, respecting causes which spread such wide devastation amongst mankind. Botallus, Joubertius, Forestus, and many other candidates for medical fame, flourished in this century.

ON Dieteticks, Exercise, and the general regimen of the Non-naturals, the three modern centuries present us with a variety of Authors. The industry and skill displayed by H. Mercurialis in treating of the Gymnastic exercises and baths of antiquity will satisfy the highest expectations. J. Bruyerinus, de re cibaria; J. Alexandrinus and H. Car-

H. Cardanus, *de sanitate tuenda*; L. Cornaro, *de vitæ sobriæ commodis*; are all respectable Authors of the 16th century.

THROUGHOUT the dark ages, the Arabian Physicians had been busied principally in larcenies from the works of the Greeks and Romans, and the Europeans afterwards from the Arabians. After the introduction of the Greek Authors, and the art of Printing into Europe, a great part of the practical writers in the 16th century, seem to have been employed merely in commenting upon the Greeks. It is also evident, from the names alone of the Authors, that Britain had not then emerged beyond a state of pupillage in Medicine: none of their writers in that period (if we except Linacre and Bacon) deserve to be admitted over the threshold of the Temple.

THE 17th century is more prolific than the former, in practical authors and improvements. Medicine, in the 16th, and much more in the 17th century, was divided into two sects or factions: the Galenists and Chymists. Italy was attached to Galen; the Germans had revolted to the standard of Chymistry, of which that verbose and voluminous writer, D. Sennertus, properly styled the German Galen, together with J. B. V. Helmont, and Sylvius de la Boe, of Leyden, were the popular leaders. A third sect also then sprang up, the Mechanic and Corpuscularian, of which De Cartes was the leader. Hitherto the Chymists had been in general a banditti of irregular and vagrant empiricks, and had not, until the 17th century, completely

pleatly forced their way into the regular phalanx of Esculapius. Chymical theory and remedies then became the reigning taste in physick. This propensity in Germany, and the discovery of the circulation of England, contributed to weaken the reverence for the Galenic Theory and Practice, and for the Italian School. Until this period, most of the German, French, and British physicians had been educated in Italy. Leyden, at the end of the 17th century, became the metropolitan School of Medicine, and Paris of Surgery. It may also be remarked, that the great throng of writers in the 16th century, on anatomy, botany, materia medica, pharmacy, and the practice of medicine and surgery, were Italians, Germans and French; and that, until the 18th century, most of the medical treatises were written in Latin.

BRITAIN, from the middle to the end of the 17th century, produced several eminent medical writers. F. Gliffon gave a history of that infant disease, the Rickets, which are said to have appeared in England only thirty years prior to his publication. Many, however, and with good reason, entertain doubts, whether the disease was new, or then only got a specific name: they are now greatly on the decline. The rickets commonly begin to be visible in the interval, from nine months to two years of age; and are indicated by leanness, muscular weakness, large head, prominent belly; terminating, if not cured, either in death, or in curvature of the bones, and deformity through life.

G. Harris,

G. Harris, the cotemporary of Gliffon and Sydenham, attempted to investigate the complaints and diseases incident to young infants. To remove acridities so frequent in their stomachs he gave testaceous powders, and as a purgative, rhubarb. Until this century, the management of those tender creatures in sickness, was left to ignorant old nurses, and rude quackery. Even at present, the bills of mortality, in cities especially, are a melancholy proof, that the carnage made amongst the young part of the human species, has not yet attracted that attention from medical writers, which the importance of the subject demands. From the ancients, Rhazes excepted, we derive very trifling information on the diseases of the cradle.

T. Sydenham, the modern British Hippocrates, published, at different intervals, detached papers on epidemical and febrile diseases, intermittents, remittents, and dysenteries, upon smallpox and measles, consumptions, gout, and several chronic diseases. He marked the prevailing epidemics of each year, the effects of seasons, climate, and sensible qualities of the air, the exact symptoms and changes in the progress of diseases, the effects of certain diet and medicines, the termination into health or other diseases, and in this pursued nearly the plan of the founder of medicine. It was Sydenham's misfortune seldom to consult other authors. In the infancy of medicine, his method of observation and practice would have been proper; but to suppose that little progress had been made by his predecessors, particularly

ticularly in discriminating diseases, was too hasty a conclusion. Dr. Lind observes, that Sydenham's observations are local, and confined to a healthy spot, otherwise he could not have pronounced a continual fever of 12 or 14 days duration, the most constant and primary fever in nature; nor would his practical rules of cure suit the fevers of tropical climates, nor the autumnal fevers of Europe. Another, and I presume an erroneous opinion, entertained by this great man was, that the epidemical fevers of every year and season were annually diversified, and essentially different in their nature; that in short, "the multifarious operations of nature in producing a diversity in diseases, were impossible to be traced. Experience and observation, if I mistake not, proves on the contrary a simplicity and general order in distempers, the autumnal remittent fevers of Europe, and those of different tropical climates, are in essence the same diseases, and cured by the same medicines. The manifest qualities of the air, seasons, and climate will account for any other differences. If Sydenham's proposition was true, and in the latitude he alledges, we could have no established history of febrile diseases, much less any fixed rules in medical practice, or correct prognosticks. Sydenham's merits, however, greatly preponderate. He assisted to direct Physicians thoughts to proper objects, to observe the effects of the atmosphere and seasons, and the "lædētia & juvantia" in diseases; to neglect those frivolous pursuits of constantly prying into the blood,

blood, bile, or other humours for the origin of diseases, and to venture out of the leading strings of antiquity. He contributed to the introduction of Peruvian bark into medicine, and to dispel the prejudices conceived against this remedy; but he gave it in intermittent fevers chiefly, and too sparingly. He described accurately the different species of small-pox, and reprobated the hot fiery regimen and close rooms in this disease, a practice then supported by several physicians of fame and repute.

FROM the beginning to the termination of the 17th century, there are a considerable number of eminent writers on different practical subjects of medicine. Such are, C. Pifo, de Morbis a serosa colluvie. J. Wepfer, de Apoplexia, de Cicuta, de Venenis, &c. T. Willis, de Pathologia cerebri. L. Bellini, de Urinis & Pulsibus, de Morbis Capitis & de Febris. R. Morton on Fevers and Consumptions. C. Bennet, on Pulmonary Consumptions. L. Septalii, Observationes Practicæ. M. Zuccari, and F. Ranchini, de Morbis Puerorum. V. Kettelaer, de Aphthis. F. Redi, de Vermibus. G. Ballonius, de Morbis Mulierum. B. Ramazini, de Morbis Artificum. G. Baglivi, Praxis Medica; or Miscellaneous Practical Observations. N. Tulp, Observationes Practicæ. L. Riverii, Observationes; sive Systema Medicinæ Practicæ. M. Etmuller, Systema Medicinæ Practicæ. J. Schenkii, Observationes Medicæ Rariores.

IN explaining the medical practice of various remote Nations, the following Authors excel. G. Pifo, de *Medicina Braziliensium* : J. Bontius, de *Medicina Indorum & Persarum* : G. T. Reyne, & A. Cleyer, de *Medicina Sinensium* : T. E. Grindler, de *Medicina Indorum*. The Practice of the modern Egyptians is recorded by Alpinus, whom I have, on another occasion, mentioned.

THE Class of Dietetic Authors, and those properly relating to domestic medicine, are, M. Sebizius, de *Alimentorum Facultate* : H. Conringius, de *Dieta veterum Germanorum* : A. Anselmi, de *Regimine Senum* : G. W. Wedel, de *Dieta Literatorum*. This last Author has written voluminously on a variety of Medical subjects. Nonnius, Vogler, Lemery, and many others, may likewise be usefully perused on Dieteticks.

MEDICAL Jurisprudence began in the 17th century to be the Theme of a few celebrated publications. In this class of writers, F. Fidelis and P. Zacchias are conspicuous. Various instances occur in judicial trials, the decision of which is founded on the deposition of Physicians and Surgeons.

ON the duties, and on the moral and political conduct of Physicians, Claudinus, Castro, Bohnius and Capua have devoted separate publications.

VARIOUS experiments began, for the first time, to be made in this century, of transfusing blood and medicines through a pipe into the veins of brute animals; but they were found so dangerous
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and fatal, that, in all probability, no similar attempts will be hazarded on the human species. The process is described by J. D Major.

THE present, or 18th century, is ushered in by several writers, whose names can never be obliterated, but with Literature and the Medical Science.

T. BONETUS, near the end of the 17th century, in his *Sepulchretum Anatomicum*, collected from a variety of writers, since the revival of anatomy, three folio volumes of morbid cases and dissections, where the bodies after death had been opened, in order to explore the causes and seat of different diseases. Morgagni, in his collection, called *de causis & sedibus morborum*, Lieutaud, Haller, and many others have enriched this morbid repository with similar observations. Morbid dissections form a new and interesting epoch in medicine. Pathology no longer rested upon imaginary depravities, or redundance of the elementary humours, but was founded on facts and demonstration: the causes of many diseases, especially those which originate from some internal derangements, the changes wrought by the continuance of the distemper, and the immediate causes of death in many febrile and acute diseases, were by this means detected: the rocks upon which many vessels had been dashed and shipwrecked, were pointed out; physicians were taught to foresee danger, and from misfortunes to derive more wisdom.

Two authors, the one of Germany, the other of Holland, during a few years of the last, and
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many of the present century, attracted the attention of Europe: the names of F. Hoffman and H. Boerhaave are familiar to all medical men. Each has attempted to concentrate into one great system, the symptoms, history, causes, theory, and cure of all diseases. Those two writers continue at this day to divide the esteem of Physicians, and are at many universities the text-books of medical lecturers on the practice of physick. Boerhaave's works, particularly his "*Aphorismi de cognoscendis & curandis morbis*," are rendered infinitely more precious, by the illustrations and voluminous additions of his pupil and learned commentator, Van Swieten. To peruse Hoffman, Boerhaave, and Van Swieten requires time and patience. Our resolution is staggered at the sight of about twelve gross volumes, in either folio or quarto; but Physicians cannot possibly dispense with this fatigue. In the history, and the evident causes of diseases, they are most correct, though not always infallible; in the theory, proximate causes, and method of cure, they must be followed with circumspection, and on many occasions abandoned. In Hoffman's works there are a multitude of cases in different diseases, with his answers and directions. G. E. Stahl, the colleague and rival of Hoffman, was an excellent chymist, and wrote at great length on different medical subjects, practical and theoretical.

R. MEAD wrote on the influence of the sun and moon upon human bodies, in certain diseases. This, however, was not new: Galen, and Fra-

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castorius had laid great stress upon the powers of the moon, planets, and stars. Galen imputed the power of the septennary number over febrile crises, to the lunar influence. The Egyptians and Arabians, it is notorious, were so enraptured in this science, that they might with great propriety be called astrological maniacs and lunatics. Mead also wrote on the small-pox and measles; on vegetable and mineral poisons, on the bites of mad animals, and venomous reptiles; on the plague and regulations of quarantines, and a sketch merely of the “*methodus medendi*”, in a considerable number of the diseases which afflict the human body. The mention of quarantines naturally leads me now to trace the origin of this institution.

VENICE, at that time the principal commercial and maritime power in Europe, was the first nation, who in 1494 enjoined Quarantines to be performed, not only by ships suspected of harbouring pestilential infection, but even if they arrived from Egypt, or other countries bordering on the Archipelago, where the plague is a frequent disease. The crew and cargo of ships arriving from Alexandria, and from any port in the Levant, were for a certain stated time, subjected to various regulations, and were excluded with rigid vigilance from any intercourse or contact with the inhabitants of the port where they arrived. Every commercial nation in Europe adopted the example of the Venetians. Without such precautions, all the maritime states must

trust for their own preservation have abandoned the Levant and Egyptian traffick.

IN the 16th and 17th century the plague rag'd, at different intervals, in almost every country of Europe. Fatal experience has taught us to guard with more circumspection against its introduction into any sea-port, to stifle the infection before it bursts into a flame, and to extinguish its lurking embers: 114 years have elapsed since the last plague, which desolated London. In all the Mediterranean sea-ports, they are extremely vigilant to shut out this dreadful malady. France wisely permits, to Marseilles alone, the exclusive liberty of the Levant and Turkey trade. Strange as it may appear, in the present century, several Physicians in France, and one or two in England, published and maintained this extraordinary position, that the plague which broke out at Marseilles (1720) was not a contagious or infectious disease. Dr. Mead and Astruc exerted great pains to combat a doctrine so rash, inconsiderate, and mischievous. The authors of this ruinous hypothesis, seem to have been conceited pedants, who, at the hazard of thousands of lives, obstinately hugged their own theories, and should have been chained to the galleys, or locked up in a mad-house.

FORMERLY the quarantine code was crude and imperfect; and where the plague had once got a footing amongst the people, the rules and police tended rather to increase and multiply the infection. The whole family, sick and sound, were

promiscuously incarcerated in their dwelling-house and a red cross was made upon the door, with this forlorn motto, "Lord have mercy upon us." No persons, but doctors, nurses, and other attendants authorised by government, were permitted to enter into, or to depart from the infected domestic prison: the doors were close guarded, until all within were either dead or recovered. By this inhuman and fatal policy the contagion multiplied with additional virulence. The disease, whenever it appeared in any house, was concealed as long as possible, because they trembled at a discovery, well knowing, that the whole family were indiscriminately devoted to destruction. Many who had not yet fallen sick, in spite of the vigilance of keepers and guards, escaped from their houses, and the melancholy sight of relations perishing before their eyes; from their contaminated clothes the infection was disseminated.

RULES now, more prudent and humane, are established, wherever the plague bursts over the boundaries of lazarettos. An early alarm, like that of fire, is of the utmost importance. The sick when not too numerous are instantaneously to be removed to one or more distinct houses of confinement, all porous materials, furniture, and apparel of that house are to be committed to the flames, all the domestic brute animals to be killed or secured, and sometimes even the whole habitation to be pulled to pieces, and destroyed. The sick are next to be prohibited by lines and guards

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from all possible communication with the sound, either in person, by contact, goods, or correspondence. It is now well known, that the infection can be spread to a very trifling distance by the air alone. That part of the family who remain to appearance in health, are to be shut up in another separate building, until they perform a probationary quarantine of several weeks ; and their cloathes are also to be burnt. The sick, on recovery, are to be conveyed to other houses of security, and the same precautions taken, during several weeks, to seclude them from all intercourse with sound persons. When, however, from want of timely detection, the plague has seized upon a great number, in this unhappy extremity, the sick must necessarily be left in their own houses, and the sound instantly removed to a sufficient distance from their infected dwellings and friends, there to undergo a regular quarantine. With such wise and tender management, the plague now seldom spreads to any distance amongst the inhabitants, and is now not dreaded as a universal deluge, or the day of judgment.

FROM the following sources a tolerable idea may be acquired of the nature of this tremendous foe to mankind, and of the means of guarding against and suppressing pestilential infection. Some confused accounts of ancient plagues may be found in Hippocrates, Thucydides and Galen. The great plague in the 6th century is described by Procopius and Evagrius ; that in the 14th cen-

tury by Guido de Cauliaco. The Plague which ravaged Niemeugen, in 1636 and 8, is accurately delineated by Diemerbrook : that which desolated London, in 1665, has been recorded in several journals and pamphlets. R. Brookes collected a history of the most remarkable pestilences during 300 years, preceding 1721; and R. Bradley (1721) collected some histories of pestilence. Chi-coeneau made a collection of the treatises on the plague at Marseilles (1720.) The London Gazette contains a short narration of the plague, which laid waste Messina in Sicily, in 1744. If to these be added Kanoldus, Mead, and the modern ordinances respecting quarantines, especially in the mediterranean ports, our medical library on this disease will be sufficiently stored.

THE nature of Marshy Effluvia and Contagion, the causes which engender them, and the distance to which they extend, are much better understood than formerly. The ancients seem to have had very superficial notions of the subtle nature and origin of those two great sources of mortality. Even in the days of Bacon Lord Verulam, the Jail fever was attributed to witchcraft. Here, therefore, open new prospects and important improvements in pathology, which morbid dissections could not have elucidated. From marshy effluvia principally arise Intermittent, Remittent fevers and Dysenteries, the Autumnal remittent fevers of Europe, and the Epidemical remittent fevers of tropical climates, during the rainy season.

ion. From Contagion, engendered by filth, confined air, and excrementitious human effluvia from the skin and breath, arise the Jail, Hospital, Malignant, and many of the slow Nervous fevers, varying in degrees of virulence. Fracastorius and Morton had thrown some rays of light upon these subjects; but it is to the labours and industry of Lancisi, Pringle and Lind, that the world are greatly indebted for publications so interesting to the community. Lancisi, in Italy, wrote "*de noxiis paludum effluviis.*" Pringle wrote on the principal diseases which infest armies, on Intermittent, Remittent Fevers, and Dysenteries, and on Contagious fevers, bred in Hospitals crowded with sick, and on board ships at sea. Lind wrote on the Epidemic fevers, and Dysenteries of tropical climates, and of hot countries; on the means of preserving the health of Seamen and Soldiers sent to those unwholesome regions; on the contagious fevers of crowded hospitals and ships; on the means of guarding against, and of extinguishing this subtle poison: his treatise on the Sea scurvy is a compendium of almost every essential medical observation upon that disease.

ON the diseases most harassing and noxious to armies and naval squadrons during war, better pilots cannot be found than Pringle, Lind and Monro. The ancients are extremely barren of information, respecting military medicine, and the economy of their hospitals. Cæsar, Polybius, Vegetius, and all the ancient writers, military

and medical, have left us nearly to conjecture on this subject. In the preceding century, Coberus, Portius and Mindererus published some judicious observations, “*de medicina castrensi.*” In the present century, on Army and Naval Diseases, we have Alberti, Pringle, Lind, Monro, Brocklesby, Macbride, Mezerey, Rouppe, &c. The regulations of the French military hospitals are described in Cheneviere’s “*Detailes Militaires,*” and merit perusal.

MR. Sutton, cotemporary with Dr. Mead, invented an ingenious and simple method, which is described in the latter’s works, to extract foul air and stench out of ships, where it stagnates in the wells. The apparatus consisted merely in laying pipes to communicate both with the well and bottom of the ship, and with the common fire-place: by these tubes, a constant current or draught of air was kept up, the foul air was carried off through the fire, and was instantly renewed by fresh. Ventilation, either by a wind-sail, or by pipes, is another modern invention to purify foul air in jails, ships, or crowded hospitals. Bacon Lord Verulam, I have already observed, had discovered, that salt water became fresh by distillation, and that green vegetables and fruits could be preserved a long time fresh, when close stopped in bottles or jars. Not many years ago, Drs. Irvin and Lind, and nearly about the same time, contrived to render the former discovery extremely commodious to mariners. A spiral tube or worm was fitted to the head of the common boiler, employed

ployed in cooking the ship's provisions, to this was added a condenser, as in the ordinary process of distillation, and no additional fuel was expended. Dr. Nooth lately published a new mode of preserving water on board ships at sea, from being corrupted ; which was by adding some quicklime to each cask, and afterwards by a particular apparatus to throw some fixed air into the vessel, so as to precipitate the lime previous to use. Time must yet determine on its utility. Ships, during distant voyages, being thus guarded against thirst, and against the Scurvy, by preserved vegetables, fruits, and by spruce beer, it is not impossible, says Dr. Lind, to provide also against famine in cases of fire, shipwreck, tedious voyages, long calms, and putrified provisions. In one ounce of good portable soup, is concentrated the essence of $\frac{3}{4}$ of a pound of beef ; and one tea-spoonful of Salep thickens a pint of water into a jelly. A man might easily carry upon his back several months provision of this sort. Lastly, the uncommonly successful methods employed by the late celebrated navigator, Captain Cook, in a voyage round the globe, to preserve his men in health, merit the attention of both naval and medical officers in that line of service. As such multitudes of men now live on the ocean, the diseases peculiar to this element are studies highly interesting, especially to maritime and commercial nations.

A TOTAL revolution has ensued in the ancient treatment of Intermittent and Remittent fevers,
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and of the Malignant and Nervous: there is even a considerable difference between the practice of the 16th and the present century. Our general remedies are Antimonials and Peruvian Bark. By means of the Tartar Emetic, Antimonial wine, or James's Powders, we first endeavour to obtain an intermission or a remission of the fever, a temporary truce, when the Bark is given in substance or in decoction. Indeed some of the tropical remittent fevers are so extremely violent and precipitate, that, after a vomit, no time can be with safety lost, in administering the Bark. In cases complicated with internal topical inflammations, blood is drawn; but this depends upon various circumstances, which I cannot here relate in detail: Pringle and Lind are the genuine fountains of information. In the Malignant and slow Nervous fevers, blisters are, on many occasions, applied with great advantage. In the cure of the Dysentery, we trust more to gentle purgatives at the beginning, to remove the offending cause, not neglecting, at the same time, to promote the cuticular excretion. We now know, to a certainty, the means of extinguishing infection, whether kindled in jails, ships or hospitals, or even that of the Small-pox, when such poison is concentrated in wearing apparel, or any porous materials; by fire and smoke confined, or the heat of a baker's oven, continued a few hours, it is
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effectually annihilated. This too is an important discovery.

ANOTHER direful source of mortality, especially to the younger part of the human species, originates from the foul Atmosphere of Cities and large Towns. The key to this information can only be attained by Bills of Mortality. Before the present century, Bills of Mortality were extremely imperfect and indigested. The births, genealogies, and deaths of Adam's descendants, down to Noah and the patriarchs, are recorded in Scripture; a few chapters of Genesis are plain registers of births and mortality: the Israelites were, at different intervals, mustered and numbered by Moses and his successors, and in a few uncommon pestilences, the devastation is ascertained in the Jewish history. The descent and pedigree of kings, and other great men, have also been kept in most nations who had made any progress in civilization; but general annual registers of births, diseases and deaths, are modern establishments, and were unknown to the ancients.

ON the continent of Europe, registers were established fifty or a hundred years before their introduction into England. In 1538, exact records of weddings, christenings and burials, were *first* ordered by the King and Council, to be kept in every Parish Church in England, by either the Vicar or the Curate. This order was very negligently obeyed until 1559, in Queen Elizabeth's reign, when to prevent registers from rotting in damp

damp churches, they were directed to be written on parchment. At first they seem both in Germany and in England, to have been designed merely to prove the birth, death, and descent of private persons, and the right of inheritance in property or lands. In 1592, a year of pestilence, bills of mortality for London were instituted, but were discontinued until 1603, another year of desolation by the plague, which was the only distemper then noticed in the printed reports: in 1629, the different diseases and casualties of those who died, together with the distinction of sexes, were added and published; in 1728, and not sooner, the different ages of the dead were ordered to be specified in the London bills. Upon first instituting the distinction of diseases and casualties in the bills of the British metropolis, the primary intention was to discover the numbers destroyed by the plague, and to detect concealed murders. At Vienna, Berlin, and some other cities and towns of the continent, and also of this island, registers nearly similar to London are now kept.

BILLS of mortality form a grand epoch in the science of politicks, philosophy, and medicine. Public records of births and mortality are now partly become the rules of political arithmetic, but unfortunately for Politicians and Physicians, they are yet far too incorrect and imperfect throughout Europe. Registers of diseases and deaths in London, are collected by old women, called in their respective districts, parish searchers, and who con-

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sider the ultimatum of their duty as merely to prevent private funerals, and concealed murders. The law ordains, that every person who dies in London is to be examined by the searchers previous to interment. These searchers, upon either being sent for to inspect a corpse, or upon hearing the bell toll, and inspecting the books kept in the different churches, are apprized from whence notice has been sent of a death, in order that a grave may be opened: the two parish matrons then, whose industry is stimulated by a small fee upon each corpse, set out to examine that no violence has been committed upon the dead, of which they have taken an official oath to make a true declaration, and afterwards negligently enquire from the relations the name of the disease, adding the age and sex. These records, together with the christenings, in which the searchers have no concern, are deposited with the respective Clerks of each parochial church, and by them the *Christenings of the established church, and the Burials in their respective parochial church-yards alone* are carried once every week to a general hall in the city: on the following day the weekly bill, comprehending these partial returns, is printed and published, and at the end of the year a general annual bill, in which all the weekly returns are consolidated. Several thousand annual births and burials are omitted in this mutilated register.

FROM bills conducted upon a larger scale, and with more accuracy, Politicians, Physicians, Philosophers, and Calculators of annuities, might derive

rive an inexhaustible fund of the most important and useful information. They would then demonstrate the number of inhabitants, male and female, existing at every age, in any city, province, or kingdom, the number of married, unmarried, widowers, widows, maids, and batchelors, the annual average of weddings, of pregnant women, of population and of children born, the actual and comparative ratio of mortality by every disease and casualty, and the prospects of life and death through every stage of life, the diseases principally fatal to a nation, the seasons most noxious, and the diseases most prevalent throughout every period of our annual circumvolution round the sun, the effects of diet, drink, and medical practice, the comparative salubrity and insalubrity of city, town, and country air, of different situations, and their effects upon different ages; we could then ascertain with tolerable exactness the comparative ravages of death, the force of his frightful host of pain and diseases, and the inroads by which his principal assaults and carnage might be expected; we could then, independent of venerable opinions, form prognosticks upon mathematical grounds. In medical books, almost universally, the extensive desolation of the most rapacious tyrants and conquerors are confounded with the uninteresting history and petty depredations of a robber. The bills of mortality are overlooked by all the great systematic writers on medicine; they leave us equally ignorant of the actual

actual and relative havock by those fiends which haunt and ravage the globe. Instead of fruitless enquiries into the primary elements, and of torturing the fluids and solids by chymical processes, I conceive that this science should constitute a most material and conspicuous part in the edifice of physiology, of pathology, and of the systems on the practice of medicine. It is an epitome of the general laws of nature respecting propagation and mortality. It is the annual return of the victims of all ages that are transported across the Stygian lake.

CALCULATIONS of human propagation, and mortality, of relative numbers, ages, &c. derived from a large mass of observations and registers in different parts of Europe, have been published by several eminent philosophers and mathematicians. Graunt, somewhat later than the middle of the preceding or 17th century, first wrote on the London bills, and was followed soon after by Petty and Davenant. The present century has produced several excellent treatises upon the same subject. The most celebrated are Dr. Halley's; De. Moivre's on annuities; Sufmilch's calculations; Simpson's select exercises; some essays in the philosophical transactions; Short's observations on various bills of mortality; Dr. Price's essay on annuities and reversions; and Birch's collection of the London bills to 1759. In my observations, Medical and Political, I have contracted and arranged the births, diseases, casualties, and deaths of London,

don, during the last 105 years, into a few regular tables, and have added a commentary of considerable length upon each disease and casualty. To illustrate the defects of the bills, I have also added several curious hospital returns. I have, if I mistake not, there presented an easy and practicable plan, and to be conducted without any additional expence, for new modelling and essentially improving the bills of births and mortality of London, and every other city, and of rendering those records objects of the first moment to politicians, physicians, and to mankind at large.

ANOTHER supereminent discovery claims our attention and gratitude. Neither Rhazes, Avicenna, nor any of the Arabian Physicians, who wrote in the 9th and 10th centuries, make the least mention of Inoculation. The earliest information received in Britain of inoculation, and its utility in surprisingly diminishing the mortality of the Small-pox, was from Emanuel Timoni, a Greek Physician, in a letter to Dr. Woodward, dated at Constantinople, 1713. In another epistle from the same author to the Royal Society of London, (1715) he says, that 40 years prior to the preceding date, inoculation had been introduced into the capital of Turkey, from two of the Asiatic provinces bordering on the Caspian Sea, Circassia and Georgia, where the antiquity or beginning of the practice cannot be traced back to its origin. An account of the Circassian practice may be seen in Motraye's travels to that country in 1712. Py-larini's

Jarini's account of inoculation at Constantinople, where he then resided, was published at Venice, 1715, in which year many thousands were inoculated in the metropolis of Turkey. The Turks themselves, as Mahometans and fatalists, and obstinately attached to the dogmas inculcated in the Alcoran, which command them not to fly even from the plague, rejected inoculation, and it was adopted only amongst the Greeks, Armenians, and Jews. In Greece, and the adjacent island of Candia, it had been a practice during one or two centuries earlier, and probably by means of the provincial soldiers of Turkey, had been carried into several of their tributary provinces in Africa.

BESIDES the security afforded by inoculation, we learn that the Circassians and Georgians were induced to the practice by another powerful motive, avarice, in order to preserve the beauty of their female children, and to sell them at high prices to rich Turks and Persians as mistresses. They transferred the variolous matter by a small scratch made in different parts of the body, previously dipping the point of the needle into a ripe pustule, or into a nutshell filled with variolous matter. Many Greek women at Constantinople exercised the function of inoculators, nearly in the same manner. They made four or five scratches in different parts of the body or extremities, over these punctures a plaster was laid, and after 7 or eight days, a slight fever or sickness ensued, succeeded by an eruption of pustules, but seldom or never any

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secondary fever, or violent symptoms so fatal in the natural small pox at the ebb of maturation, were observed to accompany the inoculated. They were also indifferent whether the variolous infection was engrafted from natural, or from artificial pustules.

IN 1717, Lady M. W. Montague, the elegant letter writer, and wife to the English Ambassador at Constantinople, had her son inoculated in that capital by Maitland, an English Surgeon. In 1721, Dr. Mead and Mr. Maitland made the experiment of inoculation in London upon seven condemned criminals, all of whom by that means obtained a pardon, and recovered. On Lady Montague's return to England in 1722, her daughter was inoculated by a slight incision on each arm, an improvement in the simplicity of the operation introduced by Timoni. A few months after Miss Montague, some of the royal family were inoculated; and in the same year inoculation was carried to Boston in North America.

FEARS and strong prejudices almost universally prevailed against a practice so novel. Several Physicians and Divines exclaimed against inoculation, and a variety of objections and falsehoods were soon invented and printed to depreciate this important discovery. Dr. Jurin, the fostering patron of inoculation in London, published several detached papers in the philosophical transactions, comparing the mortality of the natural, with the inoculated small-pox. From a great mass of materials,

terials, and many thousands of sick in different parts of England, he found that *one of five or six at a medium* die by the natural disease ; a proportion confirmed by later and much more enlarged calculations. In Turkey, in the northern parts of Europe, and in Africa, throughout the whole extent of the Mediterranean coast, the small-pox is still more rapacious ; in several instances it has been so virulent as to kill nearly one half of the infected. On the other hand, of those then inoculated, 1 of 50 died ; but amongst them were included young infants, many of whom are cut off by convulsions, which was laid to inoculation, together with some aged persons and valetudinarians. Besides, a very few trials had been made of its success ; Jurin's list of all the inoculated in London, and other parts of England, from 1721 to 1727, amount to 764 only.

INOCULATION, from 1727, languished in England and in North America until 1738, when it was again revived in both countries. In 1746, a small charitable hospital was erected in the suburbs of London, for the purpose of inoculation. In 1723, a few Physicians and Patriots of France had made an unsuccessful attempt to introduce inoculation into that kingdom ; and from 1724 to 1752, all the medical writers of that nation are silent on inoculation : throughout that long interval it slept there in profound oblivion, when the English publications and enlarged experience of inoculators were revived and exposed to view as a recom-

menendation of the practice. Mr. P. C. Condamine, the celebrated French patron of inoculation, could collect a list of no more than 200 inoculated throughout all France, during the first four years after its introduction in 1754. Holland had adopted inoculation in 1748. The practice was introduced into Italy in 1754, and a year after into Sweden and Denmark. The sum total of the inoculated in Sweden, during the first nine years, amounted only to 1200.

THE different registers of success and miscarriage under inoculation, and it would be easy to multiply piles of similar examples, authorize us at this day to draw the following conclusions. According to the immature calculations of Jurin, of those inoculated, 1 of 50, and of Mead, 1 of 100 died; but by accounts of later date, collected by various practical inoculators and physicians, on an average 1 only of every 500 inoculated die. In support of this moderate calculation, I have, in a former treatise, called "Observations Medical and Political," produced unquestionable vouchers and authorities. Exclusive of the immediate dreadful havock by the natural small-pox, numbers who survive are disfigured; in multitudes of others the disease is succeeded by complaints of the lungs and consumptions, and a considerable number annually lose their eye-sight. No bad symptoms of this sort follow the inoculated small-pox.

THOUGH the success of inoculation is unparalleled, in affording security from a direful disease, and in
operating

operating almost as a miracle for the preservation of mankind; yet long habits, ignorance, and superstitious prejudices obstructed its admission for a long time; it had to encounter, in every kingdom, an host of opponents, and by slow degrees got a footing. The practice at present is very far from being so universally encouraged as it merits. Even in London, and other parts of England, I have in a former publication demonstrated that inoculation is yet in its infancy.

IN the precise mode of engrafting variolous infection, Inoculators are not agreed. The Bramins of India, and several European operators, make one simple incision or scratch only with a lancet, and in length about 1-4th of an inch: others make a slight scratch in each arm, above the elbow, in order to prevent a possibility of miscarriage. Cotton, or threads of silk, impregnated with matter from a ripe pustule, are laid on the scratch or wound, and over all an adhesive plaster or bandage, which after a few hours is finally removed. Others again dip the point of a lancet, or broad needle into a ripe pustule, and by one or two scratches on each arm, convey the disease, and in this way no plaster or bandage is required. In all cases it is unnecessary to pierce beyond the thin external skin, or cuticle. I have done it to children, both awake and sleeping, without their being sensible of any operation or pain. The Bramins of India use the preserved matter of the preceding year, and taken from inoculated small-pox only;

with us Inoculators generally prefer fresh matter, but taken indifferently from either natural or artificial pustules. Some prescribe elaborate preparation by diet, purgatives, and nostrums previous to inserting the infection: young children especially may safely dispense with many of those scientific medical manœuvres, and interested ceremonies. Others with more sense and honesty take care merely that the subject to be inoculated is in health; a vegetable diet, fresh air and amusements are the only *severities* of their regimen throughout inoculation. With respect to the proper season for inoculation, it is usual to avoid the extremes of heat and cold; but when the natural disease appears in the neighbourhood, we are to disregard the lesser evil, and to fly to inoculation.

THE introduction of inoculation into England, and into other parts of Europe, the authors in support and detraction of the practice, and the different treatment of the inoculated, may be learned from Dr. Jurin's papers, from Kirkpatrick's History of Inoculation, from Maty, Gatti, Gandoger de Foigny, "Histoire de la Inoculation par Mr. de la Condamine," and from my Observations Medical and Political.

AN alarm has of late years been created against general inoculation in London and other cities, and in printed treatises it is represented as big with danger to the public safety. This opinion is maintained by many foreign writers of eminence, by De Haen, Raft, Tissot, and in London by Baron Dismdale.

Dimfsdale, and by some of the periodical Reviewers of medical publications. They all have asserted, in the most peremptory language, “ That by general inoculation in cities, at private houses, various contagious contagion is more likely from that cause to be dispersed in the natural way, and therefore upon the whole, that the community at large are more likely to be injured, than benefited by the practice, and the only asylum which they allowed in cities to all the lower and middling trades-people, is an inoculating hospital.” Upon the determination of this single proposition, rested the fate of inoculation. Could Baron Dimfsdale, the leading champion of that party, and his literary colleagues, have supported their repeated publications with as much argument as they have done with zeal and obstinacy, policy and humanity would have dictated the total suppression of a practice more detrimental on the whole than beneficial to the public. To this great medical and political controversy, I devoted an entire chapter in my *Observations Medical and Political*, and after endeavouring to refute all the arguments urged by Baron Dimfsdale against general Inoculation in cities, “ at the private houses of the lower class and middling trades-people,” I afterwards demonstrated, by decisive mathematical proofs, that an inoculating hospital in London, however large, as now conducted, or indeed in any other practicable plan, could not possibly save 200 lives annually ; that almost as many undergo the disease annually in

the natural way, as would be necessary under inoculation; that was inoculation general in the early parts of life at the houses of the inhabitants, London might save about 2000; Great Britain and Ireland between 20 and 30 thousand; and Europe about 390 thousand lives *annually*.

LET us now direct our inquiries to medicinal springs. In modern times, numerous fountains have been discovered of mineral waters endowed with different salutary virtues, and are now more frequently resorted to and prescribed in chronic infirmities. Hippocrates is silent on medicated springs, nor for several centuries after do we find them employed in the routine of practice. At Rome, Strabo, Vitruvius, Celsus, Seneca, Pliny and Galen mention some medicated waters useful in the cure of diseases. Seneca says that some strengthened the nerves, cured ulcers, and were serviceable in diseases of the lungs, and internal viscera, and that their uses were as various as their taste. Diodorus Siculus mentions, that the natural hot baths of Sicily were in use prior to those of Italy. The warm medicated waters of Germany, and of Bourbon in France, have been many ages in vogue. The hot fountains of Bath and Buxton seem to have been known to, and pointed out by the Romans: in the 16th century they were frequented as bathing springs; but their internal efficacy was little regarded or known until the end of the 17th century.

SICK

SICK persons are frequently sent by their physicians too late to medicated springs, merely to die at a distance. Numbers have been indebted to mineral waters for a respite from the grave, and a perfect recovery from diseases which had proved impregnable to all the materials of the shops. Bath is the hottest spring in England, and Buxton the second. The waters of Bath, drunk warm at the pump, and in moderate quantity, are celebrated in relieving weakness of the stomach and intestines, decayed appetite, indigestion, and acidities, whether originating from intemperance, severe study, indolence or various other causes: they are also famed in chronic fluxes, weakness of the digestive organs, or costiveness from similar causes, and in repairing constitutions injured by residence in warm climates, and by violent fevers prevalent in such regions; likewise in colic and bilious complaints, in old habitual and irregular gout, in cachexy, in several female maladies affecting the stomach and concoction, and in some cases of sterility. The waters of this spring, drunk and used as baths, and also pumped on the affected part, have performed distinguished cures in paralytic diseases, whether general or partial, in chronic rheumatisms and sciatica, in contraction, rigidity or weakness of the tendons at the joints, in foulness of the skin, tetters, leprosy, and scrophula, and as a wash in some scrophulous ophthalmies. Bristol spring, in the vicinity of Bath, was discovered in the 17th century: it is an excellent remedy

medy in pulmonary consumptions, hæmorrhages, and hecticks; and it is also commended in hæmorrhages from the kidneys and urinary passages, and from the womb, and in internal ulcers. In the diabetes, or profuse flow of urine, which is usually accompanied with a hectic emaciation, this water is a celebrated specific. It has another peculiar property, that it may be carried round the globe transparent and unchanged.

At Aix la Chapelle, and in France, and Italy, the warm mineral waters and natural baths, are successfully administered in the same diseases with the Bath spring. The heat of two strong impregnated fountains at Aix la Chapelle is equal to 144, and 160 of Fahrenheit's thermometer, and answer the purpose either of a general, or of a partial vapour bath. Artificial vapour baths were ancient remedies, but before the present century, had not been erected in this island. In some particular diseases they have done signal service: it happens however unfortunately, that like Herodicus, the Greek athletic empiric, or the medical alchymists, the proprietors of the baths are too zealous and clamorous to puff them as universal panaceas in every disease. Consult, on the other hand, the advocates for cold bathing, Floyer and Baynard, for instance, should implicit credit be given to their panegyrics, there are few diseases which are not oppugnable by immersion in cold water. Each of our hospitals, not excepting even mad-houses, should be provided with a cold, a
warm

warm, and a vapour bath. The high price at which the vapour baths in London are retailed by the proprietors, render them almost useless to the bulk of the community.

Chalybeate waters, that is such as are impregnated with iron, are deservedly extolled in female obstructions, chlorosis, and fluor albus, in nervous or muscular weakness, relaxations, and imbecility, in bloated, indolent phlegmatic habits, and decayed tone of the stomach and intestines. Several chalybeate springs are interspersed throughout this island. We have also a few celebrated Diuretic springs in calculous and gravelly complaints; mild Purging springs; Sulphureous springs renowned in the cure of cutaneous diseases; and others tinged with various medicated qualities.

In the 16th century, treatises were published on Medicinal Springs and Baths by C. Gesner, A. Baccius, J. Bauhine, and G Fallopius. Mr. Boyle, in the 17th century, sketched the outlines of a plan for a general history of mineral waters. F. Hoffman is one of the best authors that I have perused on the German springs. The French Academy have admitted into their memoirs a variety of papers on the analysis and medical virtues of different springs in France. On the impregnations and medicinal virtues of various British springs, we have Allen, Lister, Short, Guidot, Oliver, Cheyne, Charlton, Keir, Randolph, &c. Monro and Rutty have attempted to form compendiums of the most celebrated medicinal springs in different parts of Europe.

Europe. Haller has registered a large catalogue of writers on medicated fountains, and Grossen has compiled a *Bibliotheca Hydrographica*. A medical work, comprehending a concise analysis, and narration of the virtues of the most renowned medicinal springs in Europe in the cure of diseases, would be an useful production; it is a field for medical industry and abilities to gather laurels. In analyzing the impregnations of the same spring, scarce two authors agree. Whoever engages in a review of those publications, must carefully separate truth from fable; he must scrupulously scrutinize the authenticity of the materials; he may venture also to lopp off a farrago of theoretical bombast, chymical trash, trivial records, and a thousand superfluities. This then might be termed a pharmacopœia of some of the most agreeable and powerful remedies spontaneously prepared by nature for the benefit of man.

SEVERAL Chymists have attempted by art to imitate mineral waters. In the 17th century, Jennings and Howarth obtained a patent from Charles the II^d. for making artificial chalybeate waters. Dr. Priestly directs how to imitate the Pyrmont, and Bergman, of Sweden, the hot waters. Whether such artificial imitations possess the full medicinal powers of the natural spring, is not so well ascertained. When Physicians observed that lemons and oranges cured the scurvy, they concluded, from analogy, that the same effect must be produced by other acids; but after trying vinegar,
and

and the strongest mineral acids diluted, they found them ineffectual, and that the natural fruit was endowed with some latent virtue which they could not discover nor counterfeit. Medicated springs, in like manner, seem impregnated with a subtile spirit which evades the Chymical torture in their resolution of the separate ingredients. Mr. Boyle was clearly of opinion, that we could not securely determine *a priori* the medical effects of mineral springs, and that the surest way of knowing them is by long and sufficient experience of their operation upon the human body in diseases.

I PROPOSE now to make a few observations on the modern systems of Nosology, by F. B. Sauvages, C. Linneus, R. A. Vogel, W. Cullen, and J. B. M. Sagar. These writers, in imitation of the naturalists, and upon the same principles, have thought proper to arrange diseases into classes, orders, genera, and species, with a few marks of discrimination to each.

ORDER and method are unquestionably necessary in all arts and sciences. Without some arrangement in the profuse stock of materials, and observations required in the Medical profession, a prodigious confusion would ensue. Such a chaos might be compared to a large library of books piled together in disorder, to a Dictionary without any alphabetical regularity, or to a great lumber-room filled with heaps of different materials: we should be obliged to search a long time for what

we wanted, and could make very slow progress in study. The scanty learning of most rude tribes may be easily retained in the memory without any arrangement; but in literary and polished nations the objects of science and arts are so widely multiplied and diversified, that the confined memory of man, and span of human existence must be contented with a part. On these accounts arts and sciences, and amongst the number medicine, are separated into distinct groups, branching out into legions of divisions and subdivisions. It is truly melancholy, however, to think, that *diseases alone* should be so numerous as to have employed the talents and industry of several ingenious Physicians, principally in adjusting their classification and arrangement; and that like the multifarious objects of Botany and Natural history, volumes should also be filled with a dreary vocabulary of diseases.

THANKS to God, diseases are not so numerous as the vegetable tribe; surrounded with so many enemies, mankind would require as many Physicians as Cooks: if this was true, a material change and revolution should also take place in the study of Medicine; the important doctrine of the signs and diagnostics of diseases would demand infinitely more attention.

THE taste for subtilizing diseases into a variety of species began with the revival of literature in Europe, when Aristotle was still worshipped with profound reverence, and when men laboured with

with silly pains to subtilize away sense in terms and distinctions, and in the jargon of false logic. Brassavolus, in a large volume, written 200 years ago, upon the venereal disease, reckons up 234 different species and complications. G. Harvey in the same absurd manner split the Scurvy into a multitude of species. Taylor, the noted Oculist and Empiric, made 245 distinct species of Diseases incident to the Eyes. De Haen, in ridicule, says that he would undertake to make 250 species of the Epilepsy; and an ingenious man might contrive to make an equal number of species of Maniacs.

WE can marshal a certain number of diseases into one group, class, or order; they have considerable resemblance, and natural affinity in either their causes, symptoms, prognostics, method of cure, or other circumstances, and coalesce together. Such, for example, are Intermittent and Remittent Fevers, internal topical Inflammations, Dropsies, diseases peculiar to Women, and to Infants; some surgical diseases, such as Wounds, Fractures, Luxations, Ulcers, &c. Some general principles apply to an entire class and order. There are on the other hand many other diseases where no general and concise definition can be devised to comprehend them in an aggregate cluster: it is difficult to assign them any fixed station, they are so detached and unconnected with each other, and whether they are classed or not seems nearly immaterial, provided the diagnostic symptoms

or

or portrait of each are drawn concise and correct. From a distant similarity in one or two symptoms, from a concordance in the seat or locality, from theoretic notions respecting the causes, and from a variety of other circumstances, diseases might with great facility be parcelled into monstrous combinations and associations. Nosologists have accordingly varied the chords and discords, and rung the changes “ ad libitum.”

CLASSIFICATION is solely intended to assist the memory, to enable us to attain knowledge with more ease and dispatch; so that by a natural order, and a few essential marks, not too numerous to be retained in the memory, every disease may be readily found, and unerringly discriminated from all others. This should be the criterion of Nosological systems. Could diseases be known with certainty, by a single symptom, it would be a happy circumstance, and greatly lessen the labour and expence of medical studies. This I apprehend is one of the rocks upon which several modern Nosologists have split: by curtailing essential symptoms with violence, they have rendered the character of each disease, or in other words, the Genus, faint and obscure, and stripped them into naked skeletons, where the features are no longer distinct and visible. Many, especially of the modern authors, had distracted their readers with a tedious enumeration of signs, numbers of which were accidental and not constant. A tree may be correctly described without enumerating

rating all its branches, and leaves, or the head, without numbering all the hairs which grow upon it. In some febrile, and nervous diseases, almost every function of the body is disordered, but it is unnecessary to recapitulate the whole train; because in such a thicket we often lose sight of the primary and diagnostic symptoms. Modern Nosologists have leaped into the opposite extreme, and have frequently degenerated into mere nomenclators.

If on the one hand the diagnostics of Diseases, or to speak technically, of the Genus, are too concise and maimed in Nosologies, some of them in their arrangement into classes, orders, genera, and species are too prolix; the memory is taxed and teased, and becomes fatigued with futile distinctions. Like many good things, the rigid pedantic attachment to method is carried to excess. Nosologists are often outrageously methodical, and overcharged with paradoxical refinements. They proceed on some occasions like persons in a mechanical profession, attempting to improve an ingenious piece of machinery, by adding double or treble the number of wheels: they sometimes cut a single Disease into a number of pieces, or species, and confuse the reader to search for the scattered fragments amongst a number of heterogeneous orders. Their classes and orders, like those of the *strictum* and *laxum* of the ancient methodics, are frequently forced and artificial, and Diseases totally discordant in their nature,

ture, causes, and method of cure fettered together. Even in the general character of several of their classes there are fundamental errors.

ANOTHER defect in most of the Nosologists is, that they have not discriminated with marked attention the Diseases which occur frequently, and which destroy multitudes of mankind. It is absurd to bestow equal pains and care upon the diagnostics of Corns, Warts, and such meagre trifles, as upon Remittent and Malignant Fevers, Small Pox, Consumptions, &c. Diseases which are liable to be mistaken for others should also be more correctly described; and there are other dangerous Diseases which should be detected in embryo, and crushed in the bud. Boerhaave, Hoffman, and most of the great modern systematic writers, have allotted a separate class to the diseases of Women, and another to those of Infants. Most of the Nosologists, however, have deserted the order of nature, and have left the numerous train and series of complaints peculiar to the female sex, and to infants, stifled and undistinguished amongst the crowd: placed in two classes, upon the fore ground of the picture, they would appear more distinct and visible. It would, perhaps, also be more useful to mark, in chronological order and gradation, the synonymous or different names, by which authors, that is, those of eminence, have characterized the same disease.

THE technical terms of science, one of the greatest nuisances, which defiles and darkens every branch of Physick, are unnecessarily increased by the Nosologists. Sauvages has an Order called Hallucinationes and Morositates, Vogel Diseases called Alotriophagia, Sparganosis, Hemantosis, Acatoposis and Carebaria; the etymology and meaning of which the old Greeks, were they to return to the earth, would be puzzled to decypher. Should the career of Nosology, and licentious affectation of new terms, go on for a century, we shall it is to be feared, have a synod of Nosological Methodists, a new language and medical orthography, and all the old books will be rendered scarce intelligible.

GRAMMARIANS have thought, that they could not more effectually and speedily instruct their readers in the principles of grammar, and in the rules for writing the language with perspicuity, than by pointing out examples of faults committed by eminent classical writers. This I trust will plead my apology for the few preceding comments on those illustrious Nosologists. The nature of this compendium will not admit of a more pointed and specific criticism in detail. The latter would be attended with infinitely less difficulty, than the general survey and outline in miniature of an intire class or community of writers.

The following distinguished authors of the 18th century are arranged into a few clusters

from some similarity in the subject of their writings, and one cluster is miscellaneous.

A. Pitcairn *Elementa Medicinæ*, J. Allen's *Synopsis Universæ Medicinæ practicæ*. Juncker's *conspectus Therapiæ generalis*. F. Home's *Principia Medicinæ*. The London Practice of Physick. *Elements of the Practice of Physick*, by G. Fordyce ; by W. Cullen ; and by J. Gregory. Vogel's *Prelectiones Medicæ*. G. W. Wedel *Pathologia*. H. D. Gaubii *Systema seu Compendium Pathologiæ*.

F. Torti *de Morbis Epidemicis & febribus*. R. Manningham on the Febricula. J. Huxham on the Pleurisy, Peripneumony, Nervous and malignant Fevers, Small Pox, and Putrid Sore Throat. J. Fothergill on the Putrid Sore Throat. Helvetius *de Variolis*. Hillary on the Small Pox : ditto on the Diseases of Barbadoes : ditto on the Weather and Diseases. Ratty's history of the Weather. G. Cleghorn on the Epidemical Diseases of Minorca. J. Rogers and M. O'Connel on Epidemical Fevers at Cork. J. Sims on Epidemical Diseases. Clarke on the Diseases in long Voyages to the East Indies.

G. CHEYNE on the Gout, Hypochondriacal and Hysterical diseases. B. Mandeville on the Hysterical and Hypochondrical disease. On the Gout, G. Musgrave, W. Cadogan, Williams, Grant N. Robinson on the Spleen and Vapours. R. Whytt on Nervous and Hypochondriacal diseases. P. Sachi-nus *de eruditorum morbis*. Tissot on the Diseases of
People

People of Fashion and of Literati. G. C. Schellhammer de humani animi affectibus, & inde expectandis in corpore bonis malisque. Battie on Madness. Senac on the Heart, and its Diseases.

J. FLOYER on the Asthma. J. Miller on the Asthma and Chin cough. R. Blackmore on Consumptions. R. Ruffel de Tabeglandulari, and utility of Sea Water in the Scrophula.

ON the diseases and medicinal treatment of Infants, Brouvet; B. Meibomius; G. Armstrong; W. Moss.

DE Vermibus corporis humani; Le Clerc; S. Coulet; Andry; Van Doevern.

ON the Venereal Disease we have many writers, but few material therapeutic improvements in the 17th century. In the present century J. Astruc, in two quarto volumes, collected the names of all preceding authors on this disease, and almost every essential practical observation on the symptoms and cure. It is now cured without those violent shocks given to the constitution, by profuse salivation and sweating, which formerly undermined the health, and proved fatal to numbers of the indiscreet votaries of Venus. Unless the case is extremely virulent, we seldom think it necessary to push mercury to the excess of exciting a salivation. Our general remedies continue to be either Mercurial Uction, or crude Mercurial pills, Calomel pills, or a solution of corrosive sublimate, with decoctions of Guaiacum and Sarsaparilla. I will not surfeit the reader

with a long catalogue of writers on the Venerea Disease: it is one of the hot beds of Empiricks and of empirical treatises: the majority of them are like summer insects, that buz for a day, and are unworthy of record.

J. La Bruyer wrote a treatise on the uncertainty of the signs of death. On the means of recovering drowned persons to life, small pamphlets have been published by the Humane Societies of Holland and of London, and one by W. Cullen. The false notions of the Lungs and Stomach, in such accidents, being filled with water is exploded, together with the rude treatment and suspension of the head. By means of heat, incessant friction by assistants, blowing air into the lungs, and heated tobacco fumes into the Anus, a considerable number who had not lain too long under water have been rescued from the grave.

MISCELLANEOUS Treatises. De Haen's ratio Medendi. C. Letsom's Medical Memoirs. D. Monro on the Dropsy. Young on the effects and use of Opium. Nihel's predictions from the Pulse. Percival's Essays. Aitkin's Thoughts on Hospitals. N. Robinson on the Stone and Gravel. G. Baker on the Colic and Poison of Lead. Bianchi Historia hepatis. Mudge's description of an Inhaler, to convey medicated steams into the Mouth and Lungs.

DE Jurisprudencia Medica, & Chirurgica. F. Fidelis, P. Amman; M. Albertus; J. Bonnius.

G. Fuller on the utility of Exercise. G. Cheyne on Health and long Life, and on the regulations of the Nonnaturals, and choice of diet. J. Arbuthnot on Diet and Aliments. N. Andry *Traité des Alimens*. J. Armstrong's Art of preserving Health. Barry on Wines. On Domestic Medicine, Tissot and D. Buchan.

J. Furstinavius de desideratis Medicis. Machievelium Medicum. J. Gregory's Duty and Office of a Physician.

DISEASES of the Brute Creation. On Diseases of Horses, Gibson and Bartlet. On Diseases of Sheep and Black Cattle, various authors are collected by Haller, and in the *Giournal di Literati of Italy*.

It may possibly be attributed to either ignorance or negligence, that the pathological system of Gaubius, a text book in many universities, is flurred over without any comment. I have long considered the systems of pathology, and even that of my old learned Dutch master, Gaubius, as imperfect, both in the general outline and composition. They are in general too refined for the active business of medicine; and are not yet, as I conceive, sufficiently disentangled from the reveries of the Galenists, Chymists, and Mechanics.

THE pathology of diseases, whether originating from external or internal causes, is certainly much more clearly elucidated, and better understood by the moderns; but the "*Methodus Me-*

dendi", has not kept pace with those improvements. Credit has been given to a thread-bare saying, that if you tell the Physician the disease, he can soon find the remedy. In some cases this is true, in others it is false. One author pursues the rout of others, and directs us to perfect the history of diseases, make observations and multiply symptoms is the hue and cry. We have very good histories of Gout, Stone, Consumptions, Asthma, Plague, Epilepsy, Apoplexy, Palsy, Madness, Head-ach, Scrophula, Dropsy, Cancer, Gangrene, Mortification, &c. To render our resistance against diseases and death more successful, our principal defect *at this day* is in remedies, remedies, remedies. In the more effectual means of curing the above diseases, we have not greatly outstripped the ancients; and this will account for the conciseness of my comments, or rather silence upon that part of the modern practice.

O B S T E T R I C K S.

AMONGST the ancient writers of Greece, Rome, and Arabia, we have no publication that can be called a regular or compleat system of Obstetrics, and much less of the diseases of Infants. Hippocrates is abundantly diffuse on female diseases; but on the Obstetric art his precepts and those of Ætius had not grown beyond the embryo of this science.

Ambrose

Ambrose Parey, a French surgeon, of the 16th century, is one of the first amongst the moderns who began to reform and improve Obstetrick: indeed most of the succeeding eminent writers on this subject will be found to be either French or British. At Rome, says Haller, in the year 1627, there was but one man who practised Midwifery. In Britain we could at present muster a numerous army of this neuter gender.

The principal scope of modern Obstetric systems is to describe the structure of the pelvis, or bony cavity, through which the infant must descend previous to delivery; the structure of the female organs of generation; the signs of pregnancy; the process of generation, of the nutrition, gradual enlargement and size of the fetus; the process of parturition, whether natural or preternatural, the causes of tedious and difficult labours, and the necessary assistance; the diseases peculiar to women, before pregnancy, during pregnancy, and after delivery, and the diseases of infants, and cure. In fact the whole materials of Obstetricks consist of very little more than parings from Anatomy, and the practical part of Medicine. Obstetricks now very properly form a regular course of Academic lectures at many universities; where the process of parturition, in every possible variation, is previously demonstrated and explained on machines resembling the mother and fetus. The most general causes
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of tedious labours are few in number, and depend upon either the fetus or the mother. They are to be attributed either to a preternatural position of the fetus, to its large size, a dropsy of its head, or to its being dead; if on the side of the mother, to a narrow or deformed pelvis, to faults of the uterus and vagina, to her debility, &c. The dangerous diseases which sometimes accompany and succeed parturition are also few in number: such are, profuse Floodings, Milk fevers, Inflammation of the womb and peritoneum, suppression of the milk, and deposition of it on some vital organ, sudden and premature suppression of the Lochial Flux, Miliary Fever, and sometimes, but very rarely, malignant infectious Fevers.

The eminent writers of the 17th century on Obstetrics are, C. Viardel: F. Mauriceau; Chamberlayne; Chapman and Giffard. Mauriceau of Paris, somewhat later than the middle of that century, published two quarto volumes, which embrace the whole Obstetric art. Chamberlayne of London, had invented a new kind of Forceps, which was kept for some time as a secret in his family, but were publicly described and delineated by Chapman and Giffard. In the natural presentation of the infant's head foremost, the labour is sometimes too tedious, nature is unable to propel the infant, and the mother's strength is exhausted; in this emergency the hands alone cannot often give sufficient assistance,

ance; the fillets of the ancients were inconvenient, difficultly applied, and frequently ineffectual; Forceps therefore have been invented, and have undergone successive improvements, the use of which are to grasp the infant's head, and in this way to extract it alive without any injury.

IN the 18th century, treatises and systems on Obstetrics have been published by H. Deventer, G. La Motte, and Levret; an abstract or obstetrick compendium by R. Manningham; an incomparable and compleat system by W. Smellie, who also made some additional improvements to the Forceps: a systematic compendium has been lately published by J. Foster; another by A. Hamilton, divested of technical terms, so as to be understood by the female sex. J. Leake has written on the diseases of pregnant women, and those which succeed delivery. Astruc, formerly mentioned, wrote likewise a separate treatise de Morbis Mulierum.

CUTTING through the Abdominal Muscles into the womb of a pregnant woman, who cannot, even by the scissars and crotchet, be delivered of her child, is called the Cæsarean operation. The ancients never undertook this operation, but immediately after the mother had expired in labour, in order, if possible, to save the infant's life. When the mother is so exceedingly deformed and ricketty, and the passage, through which the fetus must descend, is nearly closed up by projecting bones,
some

some modern surgeons and Acocheurs have ventured upon this terrible operation, in order to preserve both the mother and infant. In such forlorn extremity another experiment has been lately attempted and recommended, which is, to divide the pelvis with a knife, and to sever the bones at the lower anterior juncture of the belly. I shall not utter one syllable in commendation of those frightful operations: fortunately, they are phœnomenons that we seldom or ever see, but read of like an earthquake. In a few rare cases, perhaps, some miserable lives have been prolonged in wretched existence, by such shocking butchery: it is however to be dreaded, that the consequences may have turned out to the general disadvantage; that they contribute to blunt sensibility, to rouse a bold and barbarous emulation; and in the hands of ignorant and rash men, have been dangerous precedents. Several mothers and infants it is to be feared have fallen victims to unnecessary force and instruments; to either the ignorance or precipitate ostentation of male accocheurs, impatient to display their own dexterity independent of Nature's efforts.

THE last observation which I shall make on the subject of obstetricks, is to express my ardent wish, that schools may be erected in a few of the principal cities throughout every kingdom of Europe, for the instruction of female practitioners in midwifery: in one year they might be taught all the rudiments of the profession, and afterwards should be licensed

censed to practise it. Nature unquestionably over the globe is the principal operator in parturition; but Nature not unfrequently is erroneous, and requires assistance, and is often disturbed by unskilful interruption. To imagine, that obstetrics can be learned by inspiration, or by the untutored genius and experience of a single individual, when every clumsy trade requires an apprenticeship of years, argues the extreme of absurdity and ignorance. This defect in national police may with great justice be set down as one check on population.

S U R G E R Y.

SURGERY, in the strict limitation of the art, is principally confined to wounds, fractures, luxations, tumours, ulcers, and to the different manual operations, instruments and bandages. These are the themes of general Systems of Surgery. On this science and art amongst the ancient surviving writers, Hippocrates, Celsus, Galen, P. Ægineta and Albucasis, alone possess any intrinsic excellence.

It is within the last three centuries that we have any original improvement in surgery, from the era of the Arabians; nor do I know of any eminent British Surgical writers, until within the last 130 years. "In Germany," says Heister, "all the different
Surgical operations, at the beginning, even of
the

“ the 18th century were left to Empiricks; the
 “ rest were contented to cure a wound, open a
 “ vein or an abscess, return a fractured or lux-
 “ ated bone, but they seldom or never ventured
 “ to perform any of the difficult operations: he
 “ also speaks of their gross ignorance of the
 “ Latin language.”

THE first Surgical work of the 16th century, entitled to any preeminence or criticism, is that of J. Carpus; but in the effulgence of later writers, his light is scarce perceptible. F. ab Aquapendente, an Italian, published a system of Surgery, containing a description of the various diseases, accidents and operations. Boerhaave pays this Author the following compliment: “ ille superavit
 “ omnes, & nemo illi hanc disputat gloriam; omnibus potius quam hocce carere possumus.” About the same period, A. Parey, a Frenchman, made several important additions to Surgery, particularly in his collection of cases of wounds, fractures, and other accidents which occur during war. The ancients, who were ignorant of gunpowder and fire-arms, are defective in this part of military surgery. Parey pretends to have first invented the method of tying, with a needle and strong silk thread waxed, the extremities of large arteries, after the amputation of a member. The ligature of the blood-vessels is however merely a revival of the ancient practice, which had fallen into disuse; throughout the dark ages, the hot iron, cauteries, and strong astringents were substituted

stituted in its place. B. Maggius, and L. Botallus wrote on the cure of gun-shot wounds. J. A. Cruce wrote a system of surgery.

IN the 17th century, Surgery was enriched with several systems, and with detached or miscellaneous observations. The principal Authors are, M. A. Severinus, V. Vidius, R. Wiseman, Le Clerc, J. Scultetus, J. Mangetus, C. Magatus, Spigellius, F. Hildanus, T. Bartholin, P. de Marchett.

THE 18th century opens with several eminent Surgical writers and improvements. In the operation of Lithotomy, as described by Celsus, the Rectum, or lower gut, and often the feminal ducts were wounded, fistulas ensued, or the power of generation was annihilated. The moderns therefore invented three methods different from that of Celsus. One method, and the earliest, was to introduce a catheter into the urethra and bladder, and upon that to make a direct incision through the urethra, into the bladder. J. de Romanis, an Italian, in the 16th century, was the original inventor of this operation, a description of which was published by his pupil, Marianus. Another method, much later invented, was to distend the bladder as large as possible with urine, and when thus enlarged and elevated, to open into it, through the Abdominal muscles, immediately above the Os Pubis. These were called the high and low operations; Celsus's, the Apparatus Minor. A French Priest, called Frere Jacques, introduced

troduced another improvement, somewhat different from the modern low operation, or Apparatus Major. Jacques's incision was directed obliquely, and to one side of the urethra, avoiding, as much as possible, to open any considerable extent of the urinary canal. Inconveniences still attended these various experiments in Lithotomy. Jacques was a bold rash man, and ignorant of anatomy; of 60, cut by him for the stone, 25 died soon after; others survived, but under an incontinence of urine and fistulas, and only 13 were perfectly cured. The Priest's operation and success is described by J. Merrey. A grooved catheter was invented to conduct the incision knife; another Surgeon added the cutting Gorget; and, with these improvements, Jacques's lateral operation is now considered as one of the most safe and successful. Douglas, Cheselden, and afterwards Le Dran, took uncommon pains to explain and to improve this operation. J. Denys also wrote well on the Stone and Lithotomy.

J. Petit, of Paris, wrote on diseases of the bones, fractures, dislocations and caries. Boerhaave says, "*Tractatus hic nunquam sibi parem habuit.*" Petit invented the screwed Tourniquet, which can be braced or relaxed at pleasure, and, in the hurry of battles, is extremely useful to compress the large arteries, and to stop the hemorrhage. Tourniquets were not used until towards the end of the 17th century. The ancients, previous to amputation, only made a tight ligature round the member, or attempted to grasp and compress

compress the arteries with the hand and fingers: from these defects, amongst them the amputation of any large member was thought tremendous, and was too frequently fatal. Of late years, the Agaric, growing upon old oak-trees, has been extolled as a powerful styptic in hemorrhages from large Vessels.

A COMPLETE description of the different Surgical accidents and diseases, and of the principal Surgical operations, as executed from the beginning of the 18th century to the present time, with descriptions and plates of the instruments and bandages, will be seen in those celebrated writers, French, German, and English, P. Dionis, and De la Faye; J. Garengot, H. F. le Dran, L. Heister, and S. Sharp. Heister's System, consists of two quarto volumes, and is prefaced with a large catalogue of writers. To Sharp's Compendium of the Surgical Operations, is added a volume, called a Critical Enquiry into the Modern Practice of Surgery. To these may be added, Saviard's Surgical Observations; J. Z. Platner's Surgical Institutions. On Gun-shot wounds, and on Fractures, Ranby and Bromfield merit perusal. Splints of a new construction, to retain fractured bones in a steady position until a callus is formed, were invented by Sharp, and improved by Pott. They are made of glewed paste-board, sufficiently stiff, yet flexible by heat; for a fractured

member they are two in number ; one of them is covered with longitudinal rows of small brass buttons, lateral straps of leather are fixed to the other, and surround the leg ; by these the Splints can be easily braced and slackened to the minutest degree, according to the feelings of the patient, without in the least disturbing the fractured member ; the apparatus can be speedily applied, and in fractures of the lower extremities, which are most frequent, the limb is not kept, as formerly, in the stretched position, with the weight resting upon the heel ; on the contrary, the leg is laid on its outside upon one of the Splints, properly lined with flannel, and the knee more or less bent, “ ad libitum.” When the leg lay stretched out in a strait line, in a bolstered cradle or case, the uneasiness and pain at the knee and heel became so intolerable, that, in spite of every precaution and care, continual efforts were made to turn it to one side ; convulsive motions likewise, so frequent in fractured members, especially in the tense position of the muscles, operated with much more force and severity, and deformity was more liable to ensue. Gouch, with meritorious ingenuity, has invented and published a description of several machines, to secure fractured bones in a fixed station. As such accidents occur so frequently in life, and above all during war, every invention of this sort, and the Author, is entitled to public thanks. There is infinitely more skill and address

drels required to save a fractured member, than to cut it off. I should be glad to see more books published; and ingenious mechanism exerted to save legs and arms, than on new modes of cutting them off. Knives and saws are dreadful alternatives, and, if I mistake not, we have already an exuberant stock of treatises on extirpation.

NUMBERS had dragged through a great part of life, and many had died in excruciating agony, from obstructions of the urethra and fistulas, the consequence of venereal gleet, and other causes. To remedy such complaints, we find Bougies of different constructions and materials, recommended by the moderns, and described with more or less accuracy in most of the Surgical Systems. In the present century, Daran and Goulard have written dissertations expressly upon this subject. Goulard's Treatise on the Preparations of Lead, and its utility in external inflammations, sprains, contusions, and a variety of complaints, is also well entitled to perusal.

IN preventing the protrusion of Inguinal Ruptures, the modern Steel bandages, called Trusses, are more effectual than the ancient. The nature of the Hernia Congenita, or inguinal rupture of infants, was obscure before the publications of Haller, Hunter, and Pott. The last Author has written excellent Treatises on Ruptures, and on the Hydrocele.

ON diseases of the Eyes, and Surgical operations on those organs, the most celebrated treatises

are written by Maitre Jean, C. St. Yves, D. Mauchard, and Taylor. Daviel, a modern French Surgeon, rejected the operation of depressing the Crystalline Lens with a needle to the bottom of the Orbit, in couching of Cataracts; he made an incision through the external coat of the eye, and extracted this humour intire. In the former mode, the Lens frequently ascended, and again interrupted the rays of Light.

ON the Teeth, their diseases, the dentist operations and the dentition of infants, we have two excellent treatises, one in French, the other in English, written by P. Fauchard, and by J. Hunter. I do not meet amongst the ancients with any mention of artificial teeth. Hippocrates and Celsus only direct the immediate reinstating into their sockets sound teeth, suddenly loosened from the jaw. With us, artificial teeth are commonly made from the hard tusk of a sea-horse. Another modern invention, in which, unfortunately, the advantages and disadvantages are balanced, is that of transplanting sound teeth of similar shape and size, from one head, and fixing them instantaneously into the fresh sockets of another person's jaws; there they are tied to the neighbouring teeth by a waxed silk thread, and in a few weeks are firmly grasped and secured by the gums.

THROUGH the writings of almost all the eminent *anatomists*, mentioned in a preceding chapter, there are a variety of miscellaneous Surgical observations. To recapitulate their names in detail would be superfluous.

THE great superiority of the moderns above the ancients in the knowledge of Anatomy ; and the superiority likewise in the construction and workmanship of their instruments, necessarily render all their operations much more safe and prosperous. This, therefore, finishes an epitome of the principal modern Surgical improvements and Authors.

Authors by Mistake omitted in the preceding Review of the Moderns.

Anatomy and Physiology ; in the 17th century, A. Spigellii de humani corporis fabrica cum tabulis. In the 18th century, Compendiums of Anatomy, by Heister and Sabbatier.

Chymistry ; J. M. Hoffmanni fundamenta Chymixæ, &c.

Botany ; In the 16th century, H. Tragi, Herbarium Germanicum. In the 17th century, the Hortus Indicus Malabarensis.

Materia Medica and Pharmacy ; In the 16th century, J. B. Montanus ; an interpreter of Galen. In the 17th century, C. Hoffmanni de Medicamentis officinalibus. S. Pauli, de simplicium medicamentorum facultatibus.

Therapeuticks ; In the 16th century, J. J. Monados, de cutaneis morbis. In the 17th century, F. Joel, compendium artis medicæ. J. Langii, Epistolæ Medicinales. C. Amman methodus qua qui surdus natus est loqui discere potest. T. Fienus, de signis morborum.

HAVING now nearly concluded the history and vocabulary of Medical and Surgical authors, I shall close the train with those distinguished writers who have preceded me upon the same subject, and in some of whom there is a more luxuriant catalogue of names and writers, especially on Chymistry, Physicks, Botany, Natural History, Medical Theory, and Biography. The *Artis Medicæ Principes*, by H. Stephanus, in the 16th century, is merely a collection of all the celebrated ancient Greek and Latin Medical authors after Hippocrates and Galen. Near the end of the 17th century, were published H. Conringii *Introductio in Universam Medicinam, seu de dirigendo studio medico, cum additamentis postea G. Schelhammeri*. Z. Lusitanus, *de Medicorum principum historia*. J. T. Mangetus *Bibliotheca Medico Practica*. V. Linden et Merklin *de Scriptis Medicis*. In the 18th century, C. Barcheusen *de Medicinæ origine & progressu, dogmata, hypotheses, Sectæ*. A.O. Goelicke *Historia Medicinæ & Chirurgiæ*. G. Schulzii *Historia Medicinæ Antiquæ, ad annum 535 urbis Romæ*. J. Le Clerc *Histoire de la Médecine ad annum 1500*. J. Friend *Historia Medicinæ a Galeni tempore ad annum 1500*. H. Boerhaavii *Methodus discendi Artem Medicam*. A Halleri Boerhaavii

haavii Methodus discendi artem Medicam. C. G. Keistneri Bibliotheca Medica.

To explain the technical terms of Medicine and Surgery, and its collateral branches, a variety of large Lexicons have been written. In the 17th century, J.D. Gorrhæi definitiones Medicæ Græcæ. Castelli Lexicon Medicum Græco Latinum, cum additamentis Bruneri. In the 18th century, S. Blancard Lexicon Medicum Græco Latinum, cum additamentis G. Schultz : and also Quincy, James and Motherby's Medicinal Dictionaries. We cannot, however, but lament the rank exuberance of professional barbarisms which disfigures the majority of Medical and Surgical authors, and which necessarily secludes all strangers from any commerce or instruction. To them it appears like the mystical jargon of heraldry, to understand which a dictionary must be consulted step by step.

Of the THEORY of MEDICINE.

IT is justly observed, that ignorant and illiterate men have simply perceived effects; the business of learned men is also to attempt the investigation of causes. Mankind are all naturally curious to inquire into causes, but this inquisitive humour may be strained beyond the narrow bounds of our faculties. Mr. Locke, an incomparable judge of the extent and limits of the human understanding, remarks, "that we are destitute of senses acute enough to distinguish the minute constituent

“ parts of bodies, and that we have no ideas
 “ whatever, but by the effects, in what mecha-
 “ nical manner opium produces sleep, or jalap
 “ purges: our reason and senses carry us very
 “ little beyond matter of fact, and we have ex-
 “ periment alone to depend upon. We are ig-
 “ norant why aqua-fortis dissolves silver, and
 “ aqua regia gold; the causes of magnetism are
 “ unknown; the small corpuscles of matter,
 “ though active, are concealed from us.” Who
 can explain in what mechanical manner a small
 particle of variolous poison excites fever and small-
 pox, or the bite of a mad animal hydrophobia and
 madness? We know that effluvia from morasses
 often excite intermittent and remittent fevers, im-
 pure embraces the venereal disease; that Peruvian
 bark cures the first, and mercury the latter; but
 at the same time we are ignorant of the mechani-
 cal operation of these causes, and of these medi-
 cines upon the elementary parts of our fluids and
 solids. It is by experience alone we know arsenic
 to be a poison. The only true answer we can give
 to all such subtle questions is, that of the Medical
 candidate mentioned by Moliere at an examination
 for a doctoral cap; “ Cur opium facit dormire,”
 interrogates the professor; Respondet candidatus;
 “ Quia habet vim dormitivam.”

Young students are too generally misled and
 amused by systems of turgid sophistry. More en-
 larged information, reflection in the closet, and ex-
 perience, determine men, who seek for truth, to lay
aside

aside those prejudices of youth. They find themselves in a situation somewhat similar to the traveller, who in a dark night has been led astray by an "Ignis fatuus," but on the dawn of light perceives he has wandered astray: they resolve to unlearn and cast away a great part of that specious nonsense garnished with the name of theory, and to consider those oracles, whether writers or lecturers, by whom they had been misled, either as ingenuous romancers, or, perhaps, a few as self interested cheats and impudent impostors.

WHEN after close attention and drudgery of reading through unwieldy volumes, we review the jarring dogmas of medical sectaries, we cannot help being surprised at the wretched reasoning and flights of invention, which have been the objects of so much superstitious admiration. In the rude state of science and medicine, some demon was thought to torment men, and to inflict diseases: this gave birth to superstitious remedies and incantations. Upon the same principles Providence was appealed to in the dark ages of Europe, as the only arbiter of right and wrong; hence the ordeal of fire and water. The rustic people were so credulous and superstitious, as to believe, that the general laws of Nature would be suspended, and that the Divine Being was to interpose upon every trifling dispute, to give victory to the side of truth. Hippocrates and the Greek sages had recourse to the depravity or redundancy of the four supposed primary elements or humours,

mours, blood, phlegm, yellow and black bile. With the methodic and dogmatic sects at Rome, little atoms blocking up the pores, or stricture and laxity of the extreme vessels, and muscular fibres, continued the triumphant systems during two centuries, until Galen knocked this nonsense on the head, and once more restored the four humours to their former rank and activity. But it was only substituting error for error: all are equally false. Galen's theory, however, was idolized by the succeeding Romans, Greeks, and Arabians, and throughout the ages of gothic and ecclesiastic barbarity, and for a considerable time after the revival of literature in Europe. Such was the jargon which ignorance and credulity revered for ages, and called by the name of theory and philosophy.

THE moderns have drowned medicine in a sea of theory, and have out-done Plato, Aristotle, Galen, and all the subtle doctors of antiquity. They babble incessantly about hostile acids, alkalies, sulphur, acrimony, spiculæ, and salts of various sizes; of turgescence, effervescence, despumation, and plethora, either general or partial; of dyscrasies, quarrels, antipathies, and courtships of the animal spirits; of lentor or viscosity in the blood, nervous fluid, bile, and pancreatic juice, of obstruction, coagulation, stagnation, dissolution, malignancy, and scorbutic cacoethes of the fluids; of spasm, tension, and flaccidity of the solids, &c. These are a few of the principal ingredients infused
into

into modern medical writings; they are the sublimated and visionary reveries of the chymical and mechanical sects.

It may be remarked, that to whatever science or object Physicians particularly directed their attention, this they generally interwove in the theory of diseases. The Anatomist pretended, that by dissecting the small minute fibres, he should reach the cause and recesses of diseases, and learn the method of cure; the Chymist applied what he saw to take place in his bottles, crucibles, furnaces, and other extraneous experiments, to the human body, its diseases, and the operations of medicines. Others formed a medley or patchwork, composed of shreds and fragments pilfered from different sects. The generality of theoretical systems rest upon a few flimsy materials, on scanty or doubtful phænomena, the falsity of which time and experiment have demonstrated. Even now a great part of Boerhaave's theory of the proximate causes of diseases is nearly exploded; the theories of Hoffman and Stahl are likewise approaching to their sepulture. This alone should be a lesson to humble vanity, and to make men more cautious and modest.

THE science and theory of Astronomy is derived from confirmed and reiterated observations of general laws, and invariable phænomena. All the different astronomical leaders have one universal standard of their opinions, and agree almost unanimously in the facts or data. Locke in developing

loping the springs and action of the human mind, reasoned from incontrovertible principles and proofs. On the other hand, in physick, and above all, in the different theoretical systems, numerous data are yet unsettled and contradictory. In attempting to solve various intricate phenomena in physiology, pathology, and in the operations of medicines, theorists have racked their brains to very little purpose, and are bewildered in labyrinths of error. Had these extravagancies of heated imaginations been confined to mere objects of speculation, we might have regarded them as harmless novels; but unfortunately the choice of medicines and the cure of diseases have been scandalously perverted and abused to support the dogmas, and monstrous absurdities of the different sects.

MEDICAL theorists instead of walking have attempted to fly, and have thought it necessary to account for all difficulties methodically and philosophically. In other respects, they have acted similar to the two sects of Greek and Latin Christians, when Constantinople, their capital, about three hundred years ago, was besieged by the Turks: instead of opposing a formidable and barbarous enemy at their gates, the weak Emperor and his metaphysical subjects were then warmly engaged in rancorous disputation about the immaculate conception, and whether mass should be said in Greek or Latin. The analogy is too obvious.

*A GENERAL REVIEW and COMPARISON of the
 ANCIENTS and MODERNS; and some GENERAL
 CONCLUDING REFLECTIONS.*

IT will detain us a very short time to take a transient glance at the comparative progress of arts and literature amongst the Ancients and Moderns. The ancients first founded the original rudiments of most of the arts and sciences, and pointed out to us the road: by inheriting their accumulated experience we were set forward many ages; when without such assistance we should in all probability have yet groped but a short way in the dark. The ancient Greeks and Romans might probably dispute the palm with the most enlightened modern Europeans in dignity, force, and elegance of language, in poetry, in history, and in oratory. For the sublime part of the mathematics, the elements of geometry, we are indebted to the Greeks: Pythagoras, Euclid, and Archimedes were excellent mathematicians; from them we learned trigonometry, and the mensuration of the triangle, by which all other figures are measured. In sculpture the Greeks far excelled us. The five Greek and Roman orders of architecture have not yet been improved upon either as to solidity or beauty. In naval architecture, however, they are greatly out-stripped by the moderns. In astronomy we have left them at a prodigious distance, and have given a new creation

to

to the planetary system. In painting and in musick we have out-done our ancient masters. The science of variegated modulation and counterpoint is a discovery of the moderns. Musick, both in the scriptures and the Greek authors, is mentioned as a remedy in the cure of several diseases. The Art of Printing is another superlatively important invention of the moderns.

To attain all the knowledge of antiquity, through a revolution of fifteen hundred years, in every branch of medicine and surgery, we have only to consult Hippocrates, Aristotle, Theophrastus, Cælius Aurelianus, Aretæus, Celsus, Dioscorides, Pliny, Galen, Ætius, Alexander Trallianus, P. Ægineta, Rhazes, Avicenna, and Albucasis. Even of this small library, a perusal of a great part of their works might, *at this day*, be dispensed with by students and physicians, except as objects of curiosity. Their anatomy and physiology was as defective and imperfect as their geography and skill in navigation. Medical chymistry and remedies were not dreamt of by the Greeks and Romans. In pneumatics, hydraulicks, hydrostaticks, and almost every branch of physicks, or experimental philosophy, the ancients had emerged very little beyond gross ignorance. The existence and energy of a new and active element, the electrical fluid was also concealed from them. Their philosophy chiefly contains some vague conjectures on the nature of the soul, and some admirable charts of the moral duties. Bo-

tany

tany or the general knowledge of plants were then in their infancy. From the vegetable class the moderns have likewise derived several new and powerful remedies. The merit of discriminating diseases from each other belongs to the ancients. Except a few new diseases since imported from Arabia and America, the Greeks and Romans have left behind them tolerable descriptions of every disease now known: yet we are not to imagine that in the diagnosticks they are without faults and defects. In the prognosticks also they marked accurately the preceding and concomitant symptoms of crises; but in many diseases they were unprovided with weapons sufficiently powerful to avert the mortal issue and funerals which they could predict. In understanding the pathology of diseases, whether from external or internal causes, we are greatly superior to our old masters. That knowledge acquired by bills of mortality is peculiar to the moderns. Obstetricks and surgery amongst the moderns have likewise made very considerable progress towards perfection.

IN the *cure* of several acute and chronic diseases we can claim little, if any, superiority, above the ancients. Many instances might be pointed out where their curatory precepts have been precipitately rejected, or neglected for others of inferior efficacy. In the “*Methodus Medendi*,” we have not made those rapid strides by modern discoveries in anatomy and physiology, chymistry, botany, &c. which might at first be supposed, and naturally

rally expected. For instance, convulsions, consumptions, asthma, apoplexy, palsy, epilepsy, madness, scrophula, dropsy, internal aneurism, cancer, gangrene, and mortification, still remain as difficult of cure, notwithstanding the structure and physiology of the brain, nerves, lungs, glands, blood vessels, circulation and perspiration are so well understood, and the component parts of the human fluids and solids so minutely scrutinized by chymistry.

I HAVE not the most distant intention to depreciate the basis of medical studies, anatomy; it is the geography of medicine. All that I mean to insinuate is, that Physicians should not be totally absorbed in any one subordinate branch of medicine, whether anatomy, chymistry, physick, botany, or any other, as if by that means alone they could cure diseases. The attention of the moderns hitherto has been principally ingrossed by these preliminary branches, and by theory: the tide and current of inquiry has run in those channels; whereas they merely constitute the alphabet of medicine. In previously acquiring at schools the dead languages of Greek and Latin, with some modern languages, and other necessary sciences and polite accomplishments, and afterwards at universities the introductory rudiments of the different branches of medicine, nearly *one third of life* is spent. After this period, and gleaning all the practical knowledge contained in books, medical men should attend to the active and useful
part

part of the profession, “to the lædientia & juvantia,” to the discovery of remedies, and the diminution of mortality; and like astronomers to settle facts in their progress. Here are many defects and openings to be filled up, a “hiatus valde deflendus,” we are yet far distant from the goal, and there is abundant scope for emulation and improvement. It is greatly to be regretted, that not one Physician in a thousand makes a single discovery, nor adds an iota of information to the Medical fund, but jogs on in the beaten routines and repetiturs, and like the bulk of academic doctors barely keeps alive what is already known. New facts and original observations of utility are very thinly scattered even in authors of great renown. The labour, indeed, of regularly perusing a multitude of authors, even of many of those who made signal discoveries, may be considerably retrenched; we can find new and correct maps which render the old of less value. Large libraries of select books can only be consulted as dictionaries on particular emergencies.

Physicians should not despair of greatly extending the sublime part of the medical science, the diminution of mortality. We see antimonials, and Peruvian bark cure agues, and some other genera of fevers, and mercury the venereal disease; the simple herb plantain blunts the venomous bite of the rattle snake, which would otherwise prove quickly mortal; a little salt is said to destroy the deadly poison of the manchinel tree; a

small quantity of fresh vegetables or fruits correct the general putrescency of the blood and humours in the scurvy; the virtues of many plants are yet unknown; from the vegetable, mineral or animal kingdoms, and from philosophy, after a variety of trials and experiments, remedies may possibly be yet discovered to cure several fatal diseases, with as much certainty and success, as we now cure intermittent fevers, or the venereal disease; some means may be found out to check, or perhaps to annihilate the pernicious effects of that subtle poison conveyed in different specific contagions: the mortality of infants in cities we know to a certainty may be prodigiously diminished.

Our medical knowledge and grave meditations are of little signification to mankind, if we do not acquire the means of healing and of preserving lives. Ingenious theories are of no use to sick and diseased persons. The professors of medicine should not be distinguished by the subtilty of their philosophical speculations, but by their public utility. Many chronic diseases I know are not to be removed in a few days, weeks, or even months; fresh and temperate air, different diet and exercises, medicated mineral waters, baths, and agreeable amusements are all powerful remedies. I am not so credulous and sanguine, as to expect, that with a few specific medicines we shall be able to cure all diseases; on the contrary I am persuaded, that in many diseases drugs, either unskilfully administered, or out of season, do more harm than good

good, and that several fall sacrifices to too much care and physick ; neither do I wish to claim affinity with the Alchymists, and to flatter myself, that we can reverse the general laws of Nature, and make man immortal. I trust, however, and believe, that medical and even surgical knowledge in the cure of corporeal infirmities, and in the prevention of mortality, is very far remote from perfection. We should be cautious of pronouncing upon posterity ; the greatest part of Europe (Greece, Sicily, and Italy excepted) is but a few centuries emerged from rusticity and barbarism, from original chaos and ignorance in science and arts as old as the axis of the globe. Important improvements are still reserved for the present, and for future generations.

THE last features in the historical sketch of medicine, with which I shall finish this rough outline, are modern medical manners. A wise and a witty Author truly said, “ that the hopes of gain
“ and lucre, and different employments of men,
“ shape them into a variety of strange forms.” In the 16th and part of the 17th century, the learned professions were distinguished by a number of absurd customs, and carried the affectation of superlative wisdom to a ridiculous extreme : their garb, gait, and gestures were grotesque, and resembled that of magicians and conjurors : the Physician was disguised under a grave and solemn countenance ; he was caparisoned in an enormous wig, a full trimmed coat buttoned

to the bottom, and other extravagant paraphrenalia. The introduction of more liberal ideas, and above all dramatic satire, enforced by stage exhibitions, have contributed to free the public from this scholastic pedantry and stupid pomposity; to banish from science dunces and artful cheats, concealed under the mask of wisdom and cloak of gravity. The pensive look is now less studied, and the manners become less stiff and supercilious; it is no longer thought necessary, in order to appear a man of deep learning, to resemble a professor of necromancy, a lethargic philosopher of Laputa, or a scientific monster; nor, as has been reported of some old Spanish Physicians, to carry spectacles constantly saddled upon the nose, to shew, that by laborious application, intense plodding, and nocturnal lucubrations over books, their eye-sight was impaired. At present in this island, Westminster-hall, if not in technical cant, at least in their habiliments and fastidious deportment, retain more of this scholastic rust, and solemn mummary, than the Medical college.

I have now arrived at a conclusion, and in this I fear too imperfect state, have ventured to expose the skeleton of Medical history. Throughout I have endeavoured to seek for important truths and discoveries without prejudice or bias, and to direct the attention to objects interesting to mankind. Wherever I have erred, I bow obedient to correction and conviction, and shall be glad to be
better

better instructed. Should the present compendium be thought of any utility to Medical studies, I am at present employed in forming a Chart of Authors, in some distant imitation of Dr. Priestly's and other chronological, historical, and biographical charts; in which, at one prospect, and on a single map, will be arranged, and presented in chronological review, all the eminent authors in every branch of medicine, and in which the catalogue of names will be very considerably multiplied.

P O S T S C R I P T.

MY first intention was to have published a separate Chart, and upon a larger scale. Some friends, however, whose judgment I respect, are of opinion, that even in its present crude state, it may be acceptable to the readers of the preceding compendium, I offer it to their perusal with all its imperfections, and with great diffidence. It may, perhaps, assist some readers in groping their way through a mist of ancient and modern writers. In a new attempt of this difficult nature, errors and defects must be expected, and possibly a few eminent Authors are overlooked; but I trust it will be found, that the proportion of good authors omitted, is a mere fraction in comparison to those inserted. The original idea of a Chart was suggested to me by my worthy and learned friend, Dr. James Sims, to whose kind assistance I am indebted for several additions and corrections.

The Titles of each branch of Medicine are marked in the separate Divisions at the beginning, and the Authors on each branch are continued in chronological progression, across the Chart. The latter or lower part consisting of three centuries, it is obvious, is a continuation of the upper. The Numbers or Years at the top distinguish the chronology or century of the Author's publication: his birth and death I have not attempted to explore. In so contracted a scale, to enter into more minute divisions than one century, was impracticable. Again, several Authors have written in the end of one century, and in the beginning of the fol-

following, and might, therefore, with equal propriety, be placed in either. Let it also be observed, that, in the writers of the *same century*, I have not always attended to the *exact* chronological precedence of each ; on the contrary, I have, in several instances, offered a petty violence to chronology, and have arranged together, a cluster of writers (*of the same century*) from some similarity in the subject or matter of their publications. When we look a few centuries back, fifty years interval between publications appears of no more consequence than fifty days in the present era. Perhaps an alphabetical and chronological Index of the Authors would bring the Chart nearer to maturity and perfection. Another observation I wish to be imprinted on the readers memory is, that no Author's name is introduced a *second* time under any single Division or branch of Medicine, however general and diffusive his writings may be on that particular branch ; but should the same Author also excel as a writer on any other detached branch of Medicine, there I have likewise introduced him a second time : such repetitions, however, are not altogether numerous.

THE Chart, as to the Chronology, commences 400 years only *before Christ*. It was impossible in such confined limits to have strayed further back to the fabulous ages of Medicine, or even to Esculapius, whose era is 950 years before the Christian ; and to fill the chasm of the five following centuries, we should have had very little more than Esculapius's two sons, and the fabulous genealogy

of that family down to Hippocrates. Empedocles, Acron, and Herodicus would be stationed in the century prior to Hippocrates, and merely as the ghosts of publications long since extinct. So far as respects the immediate Medical and Surgical Authors down to 1500, the Chart is, I believe, tolerably full and accurate. The Punctum, or Period (.) at the end of several ancient authors names, during the first six centuries, is meant to signify that their works are lost. I could with great ease have swelled the list of writers, who succeeded the Arabians, more especially during the 15th, 16th and 17th centuries; but, multitudes of these being translators, compilers and commentators, I thought it of no use to overwhelm the reader in a cloud of unprofitable names. The old Latin proverb, "*Parturiunt montes nascitur mus,*" is here extremely applicable. Throughout the three last centuries, my principal care and difficulty was selection.

THE second Division of Chymistry and Natural Philosophy opens a spacious field, in the survey of which, I have intentionally circumscribed myself to a very narrow path. The Asiatic and Egyptian skill in Chymical and Alchymical experiments has been celebrated by Olaus Borichius, and many other panegyrists, who have traced it even to the antediluvian age. I begin with a few only of the earliest Alchymistical writers, whose works yet survive. During the last 1500 years, Authors have been able to collect no less than 5000 printed publications, exclusive of manuscripts, on Chymistry

mistry and Alchymy. Of these, a small select list, and principally of the more immediate benefactor to Medicine, is here introduced.

THE Division of writers in Natural Philosophy, taking the term in the most comprehensive sense, is much more mutilated than even the preceding. To have embraced the great men who reared up this sublime science, I should have united Mathematicks, Mechanics, Arithmetic, and Astronomy, to Hydraulics, Hydrostatics, Pneumatics and Electricity; the four last divisions or branches of which are properly the fruits of modern genius and study. Besides, to have reached the primary sources of Astronomical observations, I should have travelled back to the ancient Egyptians and Chaldæans. Several of the ancient Greek Mathematicians and Astronomers, for instance, Pythagoras, Meton, and Euctemon, flourished before Hippocrates; Euclid, Archimedes, Hipparchus and Ptolemy are posterior to him. Had I, therefore, undertook to present a compleat chronological Chart of these eminent Philosophers, I should have been under the necessity to have continued the chain throughout the Arabian, and throughout the modern Mathematicians and Astronomers. For medical purposes, however, I thought it sufficient to exhibit a few of the ancient and modern great founders of Mathematical and Astronomical systems; a few of the principal modern promoters of Natural Philosophy, especially of those whose works tend to illustrate some parts of the human Physiology, or some other branch of Medicine,

such,

such, for example, as writers on Hydrostatics, Hydraulics, Pneumatics, Optics and Electricity; and I have also added a few select general Compendiums and abridgements of these Sciences.

LEARNED Societies do not commence before the 17th century. Had the authors names, who contributed their mites to these immense magazines of knowledge, been inserted and arranged, such a catalogue alone would fill a large Chart. This capacious Division comprehends a miscellaneous class of excellent writers and detached treatises on all the Arts and Sciences, and is equally allied to all: unless therefore the papers of each, so far as regards Medicine, are not likewise collected and printed in detached publications, I have left them amongst their learned brethren, to be perused either in the originals, or in general abridgements. The Medical papers dispersed throughout the Philosophical Transactions, have been extracted and printed together, in a separate publication by Dr. Mihles; and it is devoutly to be wished, that the medical essence dispersed throughout the other learned Collections, was concentrated into a smaller volume.

In selecting the writers on Natural History and Botany, I was favoured with the assistance of a learned friend and member of the Royal Society, Dr. Robert Scott. Several Voyages and Travels might have been added to the collections of Natural knowledge; and to Botany, the diffusive writers on Agriculture and Gardening. The additions made in the Chart to Botany, are principally

pally distinguished collectors of Plants from various regions of the globe, and a few who have described the Plants, collected in large Botanic gardens.

UNDER the Division of *Materia Medica* and Pharmacy, I have also arranged, in a separate cluster, the writers on Mineral waters; the latter of which, in the body of the volume, had been classed with the Practical writers. My reasons for this trifling alteration were, that the phalanx of Practical writers was exceedingly crowded; and indeed the writers on Mineral waters may, with equal propriety, be assembled with those on *Materia Medica*.

THE last Division contains the Historiographers, and the catalogue of writers on one or more of the different branches inserted in this Chart. Herodotus being a century prior to Hippocrates, could not be introduced. This collection will greatly facilitate any future attempts of a similar nature to the present work; and that every avenue to information might be opened, I have here added the principal Literary Reviews of Europe. The crowd of Biographers, who have written the lives of various eminent Physicians in different nations, are excluded from this Chart: an instructive and useful Book is the best Panegyric, and most durable Memento in the Temple of Fame. Along the base of the Chart, stand Lexicons and Dictionaries.

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ERRATA & ADDENDA.

- Page 11, Line 19, *for Chaldæans or Priests, read Chaldæans and Priests of Babylon.*
- 45, — 26, *for Heraclides the disciple of Aristotle, r. the disciple of Mantias.*
- 65, — 6, *for copied upon, r. copied from*
- 70, — 30, *for a warm sulphureous vapour, r. a warm vapour.*
- 84, — 2, *for Saumaife, read Salmazius.*
- — 13, *after Nitrous, r. warm.*
- 105, — 12, *for Tubalcain and Vulcan, r. Tubalcain or Vulcan.*
- 167, — 14, *after Haller's, Boerhaave's Methodus discendi artem medicam, add and in his various and voluminous Bibliothecas.*
- 182, — 14, *read into the extreme juncture or angle of the Subclavian and Jugular veins.*
- 190, — 29, *for those, r. that.*
- 223, — 20, *Gaubius should be classed with the writers on Pharmacy.*
- 282, — 10, *Chapman and Giffard are, by mistake, placed in the 17th century, instead of the 18th.*
- 304, — 16, *for Physick, r. Physicks.*

N. B. A few proper Names erroneously printed, are corrected in the Chart.

